The Builder.

VOL. XXXV. No. 1800. SATURDAY, OCTOBER 6, 1877.

ILLUSTRATIONS.

Pulpit, Chester Cathedral.—Sir G. G. Scott, R.A., Architect 1006
The Goculdas Tejpall Native General Hospital, Bombay (Plans, 1009).—Designed by Col. J. A. Fuller, R.E. 1007
A Cement Tester 1015

CONTENTS.

The "National" Opera House, the Metropolitan Board of Works, and the Public 993
St. James's-street 994
Current Conversation 996
Park Gateways 997
Notes in the Art Department at the Aberdeen Congress 998
The Progress of the Health Question 999
Is the prevalent Taste for "Art Furniture" and Bric-à-Brac indicative of a Sound or Healthy Æsthetic Culture 1001
House Accommodation; Ventilation of Drains; Waste of Water 1002
Pulpit, Chester Cathedral 1004
The New Infirmary Buildings, Canal Wards, and Water Tower, at Lambeth 1004
The Goculdas Tejpall Native General Hospital, Bombay 1010
The Stained Windows of Fairford 1010
The Trade-Unions Congress at Leicester: Mr. Brassey's Addresses 1011
Sanitary Institute of Great Britain 1013
The Masons' Strike in London 1013
Brighton Aquarium 1013
The Walls of St. Alban's Abbey 1013
The Roan Schools, Greenwich 1013
New Hotels in Glasgow 1014
Rural Sanitation 1015
A Cement Tester 1015
The Inner Circle Railway 1015
County of Durham: Sedgefield new Auxiliary Asylum for 402 Chronic Patients 1016
The High-Art Lover and the Artist: Henning's Models of the "Elgin Marbles" 1016
The Obelisk and its Pedestal 1016
Designed Coincidences 1016
Building on Leased Land 1016
Church-Building News 1016
Miscellanea 1017

The "National" Opera-house, the Metropolitan Board of Works, and the Public.

THE reported collapse of the scheme for another Opera-house a valuable piece of land on the Victoria Embankment reverts to the metropolitan ratepayers, who become absolute owners of all the buildings which in an incomplete state now stand thereon; while the whole of the second year's rental of that land deposited by the terms of the contract with the Metropolitan Board is forfeited to them, or to the Board acting on behalf of the ratepayers above mentioned. It is doubtless in the memory of the public that since this same land was transferred to Mr. Mapleson and the new building commenced, a war of words has been carried on in some of the daily newspapers, strong charges have been made in barely unequivocal language in the House of Commons, and an under-current of scandal has kept the waves of contemplation and expectation in perpetual movement, without, however, becoming boisterous or rough. From the very beginning the undertaking appears not to have thrived; yet the whole story of it, as a matter of principle both in the tendering for, and the letting of, metropolitan land, is one of extreme importance to many classes of the public: we will therefore endeavour to state, as shortly as possible, the facts of the case.

In the month of November, 1873, the Metropolitan Board of Works advertised for tenders from any persons desirous of taking on building lease two plots of land between the Victoria Embankment and Cannon-row. According to Sir James Hogg, only one tender was received, and it was declined. On the 15th of August, 1874, an advertisement appeared in our columns re-inviting tenders for the same land; and the following words formed part of the notice:—"The Metropolitan Board of Works hereby give notice that they will be prepared, on Monday, the 28th of September, 1874, to open tenders from persons who may be disposed to take on building lease for 80 years, two plots of land, situate between the Victoria Embankment and Cannon-row, Westminster." The advertisement continued:—"Plot 1 comprises a building area of about 16,278 superficial feet, and an area of ground *to be laid out as a garden only*, of about 10,725 superficial feet." Plot 2 was described as having a building area of about 20,100 superficial feet, and *an area of garden ground* of about 12,630 ft. Several responses to this invitation were received, we believe, and a tender made by Mr. Bulmer (and, we think, others with him), amounting to 3,000*l.* per annum, was accepted by the Board. This sum, according to Sir James Hogg, was in excess of the Superintending Architect's estimate. The tender, as is the custom, was made upon a printed form supplied by the Board, and containing, besides a plan of the land, the conditions of the contract. It is asserted that no copies of that "Form of Tender" and "Conditions" are extant, but we happen at the present moment to have one well-thumbed copy of the same lying before us. The plan annexed to that form of tender also lies before us. The two plots of land are distinctly indicated, and the division between the portion to be devoted to building and the portion to be devoted to garden is made by pink and green colours, by figures, and by a line marked "line of building frontage." Clause 7 of the "Conditions" says,—"The intended lessee shall not erect or maintain on that part of the plot which is coloured green on the plan hereto annexed any building or erection whatever, but shall lay out and at all times maintain the same part as an ornamental garden or shrubbery, to the satisfaction of the Board." Every person who tendered for those two plots was bound by those conditions, and made his price in accordance with the fact that only a portion of the land could be used for building purposes,—a restriction which seriously diminished the value of the property. Mr. Bulmer, the lessee accepted by the Board, did not make use of his acquisition: he sold his right—according to a statement made in Parliament, for 10,000*l.* premium—to Mr. Mapleson, and he asked permission of the Board to make the necessary transfer. This, after Mr. Bulmer had fulfilled the preliminary conditions of the contract, was granted; and Mr. Mapleson became the lessee of the two plots, subject to the conditions under which the lease of them was granted to Mr. Bulmer.

Mr. Mapleson's intention to erect a new opera-house was well known. A certain number of architects sent him designs for the building; he chose two, which, by a mere fluke, happened to be, one, the work of a member of the Board, and the other, that of his friend, Mr. Phipps. We say a mere fluke, because Sir James Hogg explained in the House of Commons that Mr. F. H. Fowler, the member of the Board, sent his design "under an initial," and was taken by surprise on learning that it had been accepted. Soon afterwards Mr. Mapleson or his agents explained to the Board that he could not build his Opera-house if he were compelled to comply with the restriction under which the land had been let,* and for which a much smaller sum than it was really worth had been perforce accepted. He asked permission to build upon the space stipulated in the contract to be left as public garden, and he offered in compensation to leave a passage, of 15 ft. in width, on either flank of the new building, for the use of the public,—passages, in fact, which were absolutely necessary in order to afford access to the various parts of the suggested theatre. In the month of April, 1875, the Works and General Purposes Committee reported to the Metropolitan Board as follows:—"Your committee have reasons to believe that the proposed alteration in the plan will not be objected to on behalf of the Government, and provided the intended streets are increased in width from 15 ft. to 20 ft." The recommendation was adopted. On September 7th, 1875, the first brick of the new edifice was laid, in the presence of a distinguished lady, whose melancholy death is but just announced; and on the 16th of December following the first stone was formally placed by the Duke of Edinburgh.

Now, a question has been put to us by a correspondent which has been probably more than once asked by those gentlemen who tendered for the land, and who were outbid by Mr. Bulmer. The question is: Whether, when the restriction which affected the letting of the land was removed by the discretionary power of the Board, and with the consent of the Government, the two plots ought not to have been put up again to public tender? According to the original notice of the Metropolitan Board inviting the public to tender, the two plots comprised an area of building land amounting to about 36,378 ft.; and an area of garden-ground (upon which no building was to be put, but which, on the contrary, the intended lessee was to maintain for public use during eighty years) amounting to 23,355 ft. In consideration for being allowed to build upon this garden area, Mr. Mapleson gave to the public two inevitably necessary passages, containing an area of 11,920 ft., in compensation for the 23,355 ft. which, according to his contract, he and his heirs were to maintain as a public garden for eighty years,—the 11,920 ft. being given to the public to maintain at the public expense. Nor was Mr. Mapleson asked to make any additional payment for the surplus,—about 11,435 superficial feet,—which he obtained.

We will put the question in another way. Two plots of land containing 36,000 superficial feet of building-ground and 23,000 superficial feet of garden-ground were let for eighty years at an annual rental of 3,000*l.* After the letting, the Metropolitan Board allowed the lessee to devote the whole 59,000 ft. to building purposes *minus* 12,000 ft. given to the public for roadways.

* One of his reasons was based upon the impossibility of buying two small houses on the edge of the land in Cannon-row. These, after the consent of the Board to his proposal to build upon public land had been obtained, were purchased by Mr. Mapleson. This is only another and an early instance of the strange method pursued by the Board. The two houses ought to have been secured before the land was offered to public tender. An immense addition to its value would have resulted. It would be curious, moreover, to know the name of that shrewd person who secured or who *owned* those two houses before the advent of a lessee of the two plots.

Might not those who tendered unsuccessfully against Mr. Bulmer have offered more than 3,000*l.* per annum for the two plots freed from the restriction caused by the obligation, due to Parliamentary enactment, to maintain a public garden for eighty years upon two-fifths of the plots in question?

We say Parliamentary enactment, and we have it on the authority of Sir James Hogg, chairman of the Metropolitan Board, that the Board's discretionary powers in this matter were subject to the approval of her Majesty's Board of Works. This opens out another question. If the Metropolitan Board can at discretion build upon land which is the property of the public, what is to prevent her Majesty's Board from building upon that part of the Crown land on the Embankment which is also the property of the public, and by indubitable authority?

We must again weary our readers with facts. On the 8th of July, 1870, Mr. W. H. Smith referred, in his place in Parliament, to the long series of negotiations and Royal Commissions which preceded the Act of 1862, and which produced the Thames Embankment more than did the operations of any distinct body of men. In that year a Select Committee sat on the Bill of Mr. Cowper-Temple, and then, to quote Mr. W. H. Smith, though the Metropolitan Board was represented by counsel, one interest was entirely unrepresented,—that of the metropolitan ratepayers. The question at issue was whether a block of Government offices should be built upon land which, ostensibly the property of the Crown, was really land reclaimed from the Thames at the expense of the ratepayers. A clause in Mr. Cowper-Temple's Bill ran as follows:—

"That after payment had been made to the Crown for the foreshore, and to the Conservators of the Thames, all land which lay between the property of ordinary owners and the foreshore of the river was vested in the Metropolitan Board of Works, who were charged with the duty of maintaining it for ever as land for the purpose of public recreation and amusement," and further, that "all open spaces possible were to be retained in the metropolis."

We are quoting from "Hansard," and we urge that when the Metropolitan Board drew the "line of building frontage" upon the plan of 1874, to which we have referred, it simply and honestly carried out the spirit of the law of 1862, and the precedent of 1870. In that year last-named, an humble address was suggested for presentation to the Queen, which the Government of Messrs. Gladstone and Lowe resisted, but which was carried by a majority of fifty members, amongst whom were several members of the present Government. That address prayed that no public offices be erected on the portion of the Embankment which has been reclaimed from the river at the cost of the metropolitan ratepayers, and it especially referred to the Crown land. Now, the "garden area" of the two plots between the Embankment and Cannon-row, to which we have been referring, is really land reclaimed from the river at the expense of the ratepayers, and though, at the present moment, it is a small spot, isolated from existing public gardens, it may not always be so. It skirts that part of the Crown land reclaimed by the ratepayers from the Thames, and if, as is not improbable, a scheme to which we have recently alluded is carried out, the garden area in question will be immensely useful in adding to the recreation grounds of the people.

It will be in the remembrance of our readers that we made a practical conclusion to "The Story of the Government Offices" by submitting a block plan for buildings to be erected upon the site of Whitehall Palace. We kept to the frontage laid down by the law, and originally approved by the Metropolitan Board; and if public offices be built on the Embankment it is almost inevitable that an extension of those offices will be made upon the site of Whitehall-gardens and Richmond-terrace when the houses actually on it revert, at the conclusion of their leases, to the Crown, or more properly the nation. The public garden, a part of which already exists, will then extend from the angle of Whitehall-place to the furthest boundary of the Crown land at the angle of Richmond terrace, and thereby the public portion of the two plots of land on which the foundations of an Opera-house now rest will form the proper continuation of that garden. The same can even now be further continued in front of the building used by the Civil Service Commission, and appropriately terminated by the cutting of the Underground Railway. A contemplated addition to St. Stephen's Club can easily palliate the present unfinished and fragmentary appearance of the buildings fronting Bridge-street and Westminster Bridge.

It is now within the power of the Metropolitan Board, with the consent of her Majesty's Board of Works, to secure respect for the provisions, as well as the letter, of an Act of Parliament. On the other hand, it is equally within their power to obtain for the ratepayers of the metropolis an adequate sum for the rental per annum of 59,000 superficial feet of building land, in a most prominent position, during eighty years. We repeat, if the sum of 3,000*l.* per annum was easily obtained for a superficies of 36,000 *ft.*, saddled with an expensive restriction, surely a superficies of 59,000 ft. *minus* that restriction, and *plus* a noble frontage on the Victoria Embankment, must be worth at least 5,000*l.* a year.

We have alluded, in preceding articles, to our misgivings concerning the method employed by the Metropolitan Board in letting land by tender. The distrust felt by several who tendered, and by several who, in consequence, did *not* tender, for the land on Northumberland-avenue is no secret; nor is a certain circumstance connected with a building now in course of erection there at all likely to allay probably an unfounded suspicion. By a wholesome rule, enforced by the Metropolis Local Management Act, 1863, section 64,—"No officer or servant of the Board shall, in any wise be concerned or interested in any contract or work made with, or executed for, such Board." But gentlemen specially engaged in building operations are prominent members of the Metropolitan Board, and no artificial rule of morality can prevent men from being interested in matters which they may be ultimately called upon to control in a professional capacity. Further, it cannot have escaped our readers that, in connexion with the proceedings which we have imperfectly described, there is more than one reference to "the consent of the Government"; and that to all appearances "Government" has consented to approve just the contrary to what Parliament has enacted. Like "The Story of the Government Offices," this story of the Opera-house seems to call for some one,—some particular individual possessing, unlike a Department or a Board, both a soul and a body,—to whom the metropolitan ratepayers in particular, and the British public generally, can appeal for redress, or point responsibility. We tremble often lest some new hoarding should conceal a fresh public monstrosity; we sometimes wonder, almost in despair, if amongst the obligations under which the owners and builders of new edifices are placed with regard to Parliament, the Metropolitan Board, and their immediate neighbours, there be any which they legally owe to the growing taste, the improved inclinations, and the acknowledged rights of the people.

ST. JAMES'S-STREET.

This street has been the fashionable lounging-place of London Society for nearly 200 years, and when Pall-mall was a small street of little account St. James's-street was the site of the chocolate-houses and clubs that gave a special character to this part of town. Probably no other street can compare with it in regard to its thronging associations with the great of past days, and Mr. Frederick Locker has registered several of these in his lively lines beginning,—

"St. James's-street, of classic fame!
The finest people throng it!
St. James's-street? I know the name!
I think I've pass'd along it!
Why that's where Saccharissa sigh'd
When Waller read his ditty;
Where Byron lived, and Gibbon died,
And Alvanley was witty."

Sir Christopher Wren died in the street on February 25, 1723, and Pope lived for a time "at Mr. Digby's, next door to y^e^ Golden Ball, on y^e^ second terras." Steele lived in a house opposite Park-place, from 1714 to 1724, when he retired to Wales, as Swift says, "in peril of a thousand jails." Among the early inhabitants were several noblemen. Charles, Duke of Bolton, lived here in 1699, as did Henry Somerset, second Duke of Beaufort, and Sir Thomas Thynne, Lord Viscount Weymouth, in 1708; but the greatest of these was the old Countess of Northumberland, whose peculiarities are described by Walpole in a letter to Bishop Percy. She lived in the house now occupied by White's Club-house, and was the last who kept up the ceremonious state of the old peerage. When she went out to visit, a bareheaded footman walked on each side of her coach, and a second coach, with her women attended her. Lady Suffolk her niece by marriage, told Walpole that the Countess's daughter-in-law, the Duchess of Somerset, never sat down before her without leave to do so.

The road which led up to the great western way out of London (now Piccadilly) was first made when the hospital of St. James (which preceded the palace) was founded by some citizens of London, a few years before the Conquest. The Sieur de la Serre, historiographer of France, who came over to Charles I.'s court in the suite of Marie de Medicis, describes it as a long street in front of the great gate of the palace, "reaching almost out of sight, seemingly joining to the fields." It was in this long street, not then entirely built upon, that the Duke of Ormonde was seized and nearly murdered by the infamous Colonel Blood and his ruffianly associates, as he was returning home to Clarendon House,—then standing on the site of Albemarle-street. This was the only historical incident connected with the insecurity of the street, but there were many attacks upon less remarkable persons. At the end of the eighteenth century a ruffian named Renwick Williams caused a panic among the inhabitants of London by his brutal attacks upon women in the street. He was known as "the Monster," and in 1790 he assaulted Miss Porter, of St. James's-street; but this was his last outrage, for shortly afterwards he was captured by Mr. John Coleman, of Berkeley-square. Coleman was rewarded for his courage and success by obtaining the hand of Miss Porter, and the two were married on the 28th of April, 1791.

When Hannah More describes the occupation of her hero, "Florio," she writes:—

"His mornings were not spent in vice,
'Twas lounging, sauntering, eating ice;
Walk up and down St. James's-street,
Full fifty times the youth you'd meet."

It was about the middle of the eighteenth century when the shops began to make a better show in their windows, that the street became the fashionable lounge *par excellence*. Fox was one of the most noted of the loungers, and in Tickell's clever lines he is made to express to Lord John Townshend his regret at "the long-lost pleasures of St. James's-street." Fox, although negligent and slovenly in later life, was, when young, one of the greatest bucks of his day, and one of his biographers describes "Beau Fox" as "strutting up and down St. James's-street in a suit of French embroidery, a little silk hat, red-heeled shoes, and a bouquet nearly large enough for a maypole." Sheridan sings of,—

"The Campus Martius of St. James's-street,
Where the beaux' cavalry pace to and fro
Before they take the field in Rotten-row;
Where Brookes's Blues and Waltze's light dragoons,
Dismount in files and ogle in platoons;"

and the statesman Windham relates of himself and friends that returning one night from the House of Commons they amused themselves with throwing stones at each other in the park, and oranges when they came into St. James's-street. The chief characteristic of this street is to be found in the number and importance of its clubs. Some of these grew out of the coffee and chocolate houses that were once so popular,—as, for instance, White's, and the Cocoa Tree.

The immense change that has taken place in the habits of fashionable society is very strikingly brought before us when we find that the very sober and aristocratic club—White's—has grown out of the gaming-house denounced by Pope and Swift as the rendezvous of infamous blacklegs, and introduced by Hogarth into his "Rake's Progress," as a likely place for a highwayman to frequent. About the year 1698, White's Chocolate House was founded, near the bottom of the west side of the street, on the site of the present "Arthur's Club-house," and a few years afterwards Steele announced, in the opening number of the *Tatler* (1709), that "All accounts of gallantry, pleasure, and entertainment shall be under the article of 'White's Chocolate-house.'" On April 28th, 1733, the house was entirely destroyed by fire, and Arthur, the proprietor, moved to Gaunt's Coffee-house, next door to the St. James's Coffee-house, where he begged that the noblemen and gentlemen would "favour him with their company as usual." Much valuable property was destroyed in the fire, notably the collection of paintings belonging to Sir Andrew Fountaine, valued at 3,000*l.* King George II. and the Prince of Wales were among the spectators on this occasion. Soon afterwards the club was formed, in order to keep out the

common herd of gamblers, but the change did not result in a higher tone of morality, as may be guessed from the following picture :—

"From hence to White's our virtuous Cato flies;
There sits with countenance erect and wise,
And talks of games and whist, and pigtail ties;
Plays all the night, nor doubts each law to break,
Himself, unknowingly, has help'd to make;
Trembling and anxious, stakes his utmost groat,
Peeps o'er his cards, and looks as if he thought;
Next morn disowns the losses of the night,
Because the fool would fain be thought a bite."

Colonel Lyttelton, brother of Sir George Lyttelton, wrote, in 1752, the "Gamester's Address to the King on his Return from Hanover," which was supposed to be presented by the members of White's Club. In 1755, the Club was removed to the present house (Nos. 37 and 38), on the east side of the street, the front being designed by James Wyatt. Various alterations were made by Lockyer in 1850, when the four bas-reliefs of the Seasons were added, from the designs of George Scharf. When Almack started his club (afterwards Brooks's), in 1764, the worst gamblers went off there,—

"From White's we'll move the expensive scene,"

and the remaining members were jealous of the new rival. The Earl of Carlisle wrote to Selwyn on January 9th, 1768, asking him to put the Marquis of Kildare up as a candidate, but added, "Take care he is not put up first at Almack's, as that excludes him from White's." The list of celebrated men who have been members would be a long one, but a few names may be mentioned here, such as those of the Earl of Chesterfield, Bubb Dodington, Prime Minister Pelham, George Selwyn, Colley Cibber, Fox, Wilberforce, Pitt, and Rodney. Arthur was the first proprietor that we know anything of, for no particulars of White have come down to us. Arthur died in 1761, and was succeeded by his son-in-law, Robert Mackreth, the well-known "Bob." Martindale was the proprietor in 1784, and became a bankrupt in September, 1797. Ragget kept the club in 1812, and afterwards left it to his son. The freehold of the house was sold by auction on March 7th, 1871, by Messrs. Chinnock, Galsworthy, & Chinnock, of Waterloo-place, and excited considerable competition. The rental derived from the club was fixed at 2,100*l.* for eleven years, after which the lease expires. The property realised the large sum of 46,000*l.*, and the purchaser was Mr. H. W. Eaton, M.P.

The "Cocoa Tree" was a famous chocolate house in the reign of Queen Anne, chiefly known as the resort of the Tories and Jacobites. After it had been turned into a club, Gibbon joined it, and he describes the appearance of the members in the year 1762 as follows:—"This respectable body, of which I have the honour of being a member, affords every evening a sight truly English. Twenty or thirty, perhaps of the first men in the kingdom in point of fortune and fashion, supping at little tables covered with a napkin, in the middle of a coffee-room, upon a bit of cold meat or a sandwich, and drinking a glass of punch. At present, we are full of king's counsellors and lords of the bedchamber, who having jumped into the ministry, make a very singular medley of their old principles and language with their modern ones." The Club was at one time a favourite resort of the Prince of Wales (afterwards George IV.). Samuel Spring, a waiter, once had occasion to write to the Prince, and commenced his letter as follows:—"Sam, the waiter at the Cocoa Tree, presents his compliments to the Prince of Wales," &c.

As already stated, Brooks's Club (No. 60) was originally established, in 1764, in Pall-mall, on the site lately occupied by the British Institution, and upon which the house of the Marlborough Club was built in 1868. Almack's was noted for its deep play, and Horace Walpole tells us that the members played only for rouleaus of 50*l.* each, and 10,000*l.* in specie was often on the table at one time. In 1770, when C. J. Fox was a Lord of the Admiralty in Lord North's Government, the clerks were forced to wait upon him at the club to obtain his signature to warrants and orders. He is said to have preferred losing to not playing at all, and he was often gratified in this way, as appears from some verses written at the time of his greatest losses :—

"At Almack's of pigeons I'm told there are flocks,
But it's thought the completest is one Mr. Fox,
If he touches a card, if he rattles a box,
Away fly the guineas of this Mr. Fox."

One year after the opening of the club, Almack built the Assembly-rooms in King-street (now Willis's), and in 1778 Brooks, a wine-merchant and money-lender, took Almack's Club, and removed it to St. James's-street. The old house in Pall Mall continued to be occupied as a club, and was known as "Goosetrees." The new house was built at Brooks's expense from the designs of Henry Holland, but soon afterwards Brooks retired from the management because the club did not pay, and he died poor in 1782. Burke, Garrick, Hume, Horace Walpole, Gibbon, Topham Beauclerc, Reynolds, Sheridan, Wilberforce, Pitt, Fox, Windham, Sir Philip Francis, George Selwyn, Dunning, the Duke of Queensberry, and George IV. (when Prince of Wales) were members. On one occasion two friends of the Prince's were blackballed, which so offended his royal highness, that in 1788 he founded (in conjunction with his brother the Duke of York) Weltzie's Club on the west side of the street, in opposition to the old club. Weltzie was the Prince's cook, and from him Peter Pindar (Dr. Wolcot) obtained his chief anecdotes of George III. for the "Lousiad," &c. Brooks's has always been the rendezvous of the Whigs, and, in spite of the Reform Club, it still remains so. A few days after Pitt's first speech in the House of Commons on February 26, 1781, Fox brought him into the club, and in spite of his change in politics, he continued a member and paid his subscriptions until his death.

Boodle's Club, known as the "Savoir vivre" (No. 28) was established soon after Brooks's. Gibbon and Wilberforce were both members, and the first time the latter entered the house he won twenty-five guineas from the Duke of Norfolk.

Crockford's (No. 50) was called a club, and such men as the Duke of Wellington, Prince Polignac, Talleyrand, Pozzo di Borgo, Esterhazy, D'Orsay, and Horace Twiss were members; but it was unlike the clubs already noticed, and nothing more than a gorgeous "hell." The members played against the proprietor, who kept the bank. John Crockford originally kept a small fishmonger's shop in the Strand, near Temple Bar. He then became a player at the silver hazard-tables and at No. 28, Haymarket, then called Dirty Shirt Coffee-house. About 1802 he began to bet at Newmarket, and in 1827, he built the most splendid "hell" in London, and "won all the disposable money of the men of fashion in London," which allowed him to "cash a cheque for 100,000*l.* with as much ease to himself as the Bank of England would." Some members did not play, and they were mostly induced to join the club by the elegance of the *cuisine*. Ude, the *chef* of *chefs*, was cook for a time, and was succeeded by Francatelli. The Hon. Grantley Berkeley relates an amusing story of Ude's coolness. One day a member ordered some new potatoes from the bill of fare, but as they were not forthcoming, he directed the waiter to tell the great man that he required his presence. Ude came, and the member blew him up for not having furnished what was ordered. The cook defended himself with amusing volubility, and insisting that there were new potatoes, he disappeared. He shortly returned with a covered dish in his hand, which he opened, and, letting out the steam, discovered to the member the vegetables he had ordered, all the time protesting against his being accused of neglect. In the midst of his protestations he backed towards the door, through which he and the potatoes disappeared, leaving the member to admire the audacity of the cook in taking away the delicacy he was longing to enjoy. Crockford retired in 1840, and soon after died worth 700,000*l.*, after having lost as large a sum in mining and other speculations. His death is said to have been accelerated by fears as to the issue of the "Derby." The club-house was sold, and on the closure of the old club a Junior Crockford's was started in Bury-street with the object of replacing it. In the year 1849 the house was occupied by the "Military, Naval, and County Service Club," which had a short life, and was closed in 1851. Then came the "Wellington Dining-rooms" and the "St. George's Club," and in 1873 the appearance of the front was entirely changed by the substitution of a new coating of stone for the old stucco, which was cleared away. This new house was opened by the Crockford's Auction Hall Company, which opened with an imposing list of patrons and directors, but enjoyed a very short life. The building is now occupied by a new club called the Devonshire Club. When Crockford's was at the height of its prosperity, the next door (at the corner of Bennett-street) was taken by Ephraim Bond and his brothers, and opened as a gaming-house, called "Ragget's Junior." Bond, whose doings are sketched in the Prime Minister's novel, "Henrietta's Temple," first kept a "hell" in Duke-street, which he moved to 26, St. James's-street, and called "The Athenæum." From the latter house he moved to the immediate neighbourhood of Crockford. It was once said by an admirer of these two men that Crockford was the Napoleon and Bond the Wellington of the play world.

The modern clubs are much more luxurious resorts than the mean houses that satisfied our forefathers, but the mansions of Pall-mall and St. James's-street will probably never gather around themselves a tithe of the associations that cling to the Old Thatched House Tavern. The name recalls the time when the street was but little built upon, and when the house itself was a wayside inn, with a common thatched roof. This tavern was long the favourite meeting-place of convival societies. The Brothers' Club, a literary society, which preceded the Scriblerus Club, consisting of Swift, Arbuthnot, Harley, St. John, and the Tory magnates met here in 1713. The Dilettanti Society, established in 1734 by Viscount Harcourt, the second Duke of Dorset, Sir Francis Dashwood, and other noblemen and gentlemen to the number of fifty, met here till the house was pulled down a few years ago. Fines and penalties were here rampant; thus any member who called the Society a club was fined a guinea, and a payment was to be made "on increase of income by inheritance, legacy, marriage, or preferment." When Lord Grosvenor married Miss Leveson Gower he paid five guineas, Lord Sandwich was twenty guineas the poorer on account of his accepting the office of Ambassador to the Congress of Aix-la-Chapelle, and Bubb Dodington was mulcted of ten guineas when he was installed as Treasurer of the Navy. When Fox was made a Lord of the Admiralty he was fined nine pounds nineteen shillings and sixpence.

The Noblemen's Catch Club, established by the nobility and gentry for the improvement of vocal harmony, met at the Thatched House, in 1762, and flourished for many years. It was a law that each of the forty-four members should possess 500*l.* a year in land, and sufficient talent to take part in a glee. The members dined together every Tuesday from January to June, and twenty-one of the first professional singers were admitted as honorary members.

Johnson's Club, the Literary Club or *The* Club, removed here from Parsloe's on February 26, 1799, and in 1857 the Royal Society Club transferred their dinners from the Freemasons' Tavern on the removal of the Society from Somerset House to Burlington House. The Pow Wow Club, which numbered among its members John Hunter, Dr. Baillie, Sir Astley Cooper, Sir Everard Home, and Sir Gilbert Blane, held monthly meetings at the Thatched House. The club originated with Dr. Patrick Russell, author of a work on the serpents of India, and an intimate friend of John Hunter, who suggested the name as an appropriate one, the word "pow-wow" meaning a meeting of conjurors. Like the Dilettanti's, they expected that when any honours fell to a member he should treat the dinner party to champagne. Sir Astley Cooper gave the whole club a dinner on being made a baronet in 1821. In 1830 it was found that so many of the old associates had died off that the survivors determined to dissolve the club in 1830. Lord Campbell, in his Life of Lord Thurlow, gives an amusing anecdote of the rough chancellor's wit. In the debates on the Regency a certain prim peer, noted for his attention to etiquette, having pompously cited some resolutions passed by a party of noblemen and gentlemen at the Thatched House, Lord Thurlow, on rising, said, "As to what the noble lord in the red riband told us he had heard in the alehouse," &c. The poet Campbell saw Byron eating a hearty supper of meat and drinking a bottle of claret here just after he had left Rogers's dinner-table, where he would condescend to eat nothing but vegetables and drink nothing but water. A part of the tavern was cleared away to make room for the Conservative Club and the remainder for the Civil Service Club, which afterwards changed its name to the "Thatched House Club."

The St. James's Coffee House was the head quarters of the Whigs when the Tories frequented the Cocoa Tree. It was situated at the south-west corner of the street opposite to the palace, and has an interesting history, but it owes its chief glory to the fact that Goldsmith's remarkable piece of character painting called the *Retaliation* grew out of some meetings of the poet and his friends in its rooms.

Might not those who tendered unsuccessfully against Mr. Bulmer have offered more than 3,000*l.* per annum for the two plots freed from the restriction caused by the obligation, due to Parliamentary enactment, to maintain a public garden for eighty years upon two-fifths of the plots in question?

We say Parliamentary enactment, and we have it on the authority of Sir James Hogg, chairman of the Metropolitan Board, that the Board's discretionary powers in this matter were subject to the approval of her Majesty's Board of Works. This opens out another question. If the Metropolitan Board can at discretion build upon land which is the property of the public, what is to prevent her Majesty's Board from building upon that part of the Crown land on the Embankment which is also the property of the public, and by indubitable authority?

We must again weary our readers with facts. On the 8th of July, 1870, Mr. W. H. Smith referred, in his place in Parliament, to the long series of negotiations and Royal Commissions which preceded the Act of 1862, and which produced the Thames Embankment more than did the operations of any distinct body of men. In that year a Select Committee sat on the Bill of Mr. Cowper-Temple, and then, to quote Mr. W. H. Smith, though the Metropolitan Board was represented by counsel, one interest was entirely unrepresented,—that of the metropolitan ratepayers. The question at issue was whether a block of Government offices should be built upon land which, ostensibly the property of the Crown, was really land reclaimed from the Thames at the expense of the ratepayers. A clause in Mr. Cowper-Temple's Bill ran as follows:—

"That after payment had been made to the Crown for the foreshore, and to the Conservators of the Thames, all land which lay between the property of ordinary owners and the foreshore of the river was vested in the Metropolitan Board of Works, who were charged with the duty of maintaining it for ever as land for the purpose of public recreation and amusement," and further, that "all open spaces possible were to be retained in the metropolis."

We are quoting from "Hansard," and we urge that when the Metropolitan Board drew the "line of building frontage" upon the plan of 1874, to which we have referred, it simply and honestly carried out the spirit of the law of 1862, and the precedent of 1870. In that year last-named, an humble address was suggested for presentation to the Queen, which the Government of Messrs. Gladstone and Lowe resisted, but which was carried by a majority of fifty members, amongst whom were several members of the present Government. That address prayed that no public offices be erected on the portion of the Embankment which has been reclaimed from the river at the cost of the metropolitan ratepayers, and it especially referred to the Crown land. Now, the "garden area" of the two plots between the Embankment and Cannon-row, to which we have been referring, is really land reclaimed from the river at the expense of the ratepayers, and though, at the present moment, it is a small spot, isolated from existing public gardens, it may not always be so. It skirts that part of the Crown land reclaimed by the ratepayers from the Thames, and if, as is not improbable, a scheme to which we have recently alluded is carried out, the garden area in question will be immensely useful in adding to the recreation grounds of the people.

It will be in the remembrance of our readers that we made a practical conclusion to "The Story of the Government Offices" by submitting a block plan for buildings to be erected upon the site of Whitehall Palace. We kept to the frontage laid down by the law, and originally approved by the Metropolitan Board; and if public offices be built on the Embankment it is almost inevitable that an extension of those offices will be made upon the site of Whitehall-gardens and Richmond-terrace when the houses actually on it revert, at the conclusion of their leases, to the Crown, or more properly the nation. The public garden, a part of which already exists, will then extend from the angle of Whitehall-place to the furthest boundary of the Crown land at the angle of Richmond terrace, and thereby the public portion of the two plots of land on which the foundations of an Opera-house now rest will form the proper continuation of that garden. The same can even now be further continued in front of the building used by the Civil Service Commission, and appropriately terminated by the cutting of the Underground Railway. A contemplated addition to St. Stephen's Club can easily palliate the present unfinished and fragmentary appearance of the buildings fronting Bridge-street and Westminster Bridge.

It is now within the power of the Metropolitan Board, with the consent of her Majesty's Board of Works, to secure respect for the provisions, as well as the letter, of an Act of Parliament. On the other hand, it is equally within their power to obtain for the ratepayers of the metropolis an adequate sum for the rental per annum of 59,000 superficial feet of building land, in a most prominent position, during eighty years. We repeat, if the sum of 3,000*l.* per annum was easily obtained for a superficies of 36,000 ft., saddled with an expensive restriction, surely a superficies of 59,000 ft. *minus* that restriction, and *plus* a noble frontage on the Victoria Embankment, must be worth at least 5,000*l.* a year.

We have alluded, in preceding articles, to our misgivings concerning the method employed by the Metropolitan Board in letting land by tender. The distrust felt by several who tendered, and by several who, in consequence, did *not* tender, for the land on Northumberland-avenue is no secret; nor is a certain circumstance connected with a building now in course of erection there at all likely to allay probably an unfounded suspicion. By a wholesome rule, enforced by the Metropolis Local Management Act, 1863, section 64,—"No officer or servant of the Board shall, in any wise be concerned or interested in any contract or work made with, or executed for, such Board." But gentlemen specially engaged in building operations are prominent members of the Metropolitan Board, and no artificial rule of morality can prevent men from being interested in matters which they may be ultimately called upon to control in a professional capacity. Further, it cannot have escaped our readers that, in connexion with the proceedings which we have imperfectly described, there is more than one reference to "the consent of the Government"; and that to all appearances "Government" has consented to approve just the contrary to what Parliament has enacted. Like "The Story of the Government Offices," this story of the Opera-house seems to call for some one,—some particular individual possessing, unlike a Department or a Board, both a soul and a body,—to whom the metropolitan ratepayers in particular, and the British public generally, can appeal for redress, or point responsibility. We tremble often lest some new hoarding should conceal a fresh public monstrosity; we sometimes wonder, almost in despair, if amongst the obligations under which the owners and builders of new edifices are placed with regard to Parliament, the Metropolitan Board, and their immediate neighbours, there be any which they legally owe to the growing taste, the improved inclinations, and the acknowledged rights of the people.

ST. JAMES'S-STREET.

This street has been the fashionable lounging-place of London Society for nearly 200 years, and when Pall-mall was a small street of little account St. James's-street was the site of the chocolate-houses and clubs that gave a special character to this part of town. Probably no other street can compare with it in regard to its thronging associations with the great of past days, and Mr. Frederick Locker has registered several of these in his lively lines beginning,—

"St. James's-street, of classic fame!
The finest people throng it!
St. James's-street? I know the name!
I think I've pass'd along it!
Why that's where Saccharissa sigh'd
When Waller read his ditty;
Where Byron lived, and Gibbon died,
And Alvanley was witty."

Sir Christopher Wren died in the street on February 25, 1723, and Pope lived for a time "at Mr. Digby's, next door to y^e^ Golden Ball, on y^e^ second terras." Steele lived in a house opposite Park-place, from 1714 to 1724, when he retired to Wales, as Swift says, "in peril of a thousand jails." Among the early inhabitants were several noblemen. Charles, Duke of Bolton, lived here in 1699, as did Henry Somerset, second Duke of Beaufort, and Sir Thomas Thynne, Lord Viscount Weymouth, in 1708; but the greatest of these was the old Countess of Northumberland, whose peculiarities are described by Walpole in a letter to Bishop Percy. She lived in the house now occupied by White's Club-house, and was the last who kept up the ceremonious state of the old peerage. When she went out to visit, a bareheaded footman walked on each side of her coach, and a second coach, with her women attended her. Lady Suffolk her niece by marriage, told Walpole that the Countess's daughter-in-law, the Duchess of Somerset, never sat down before her without leave to do so.

The road which led up to the great western way out of London (now Piccadilly) was first made when the hospital of St. James (which preceded the palace) was founded by some citizens of London, a few years before the Conquest. The Sieur de la Serre, historiographer of France, who came over to Charles I.'s court in the suite of Marie de Medicis, describes it as a long street in front of the great gate of the palace, "reaching almost out of sight, seemingly joining to the fields." It was in this long street, not then entirely built upon, that the Duke of Ormonde was seized and nearly murdered by the infamous Colonel Blood and his ruffianly associates, as he was returning home to Clarendon House,—then standing on the site of Albemarle-street. This was the only historical incident connected with the insecurity of the street, but there were many attacks upon less remarkable persons. At the end of the eighteenth century a ruffian named Renwick Williams caused a panic among the inhabitants of London by his brutal attacks upon women in the street. He was known as "the Monster," and in 1790 he assaulted Miss Porter, of St. James's-street; but this was his last outrage, for shortly afterwards he was captured by Mr. John Coleman, of Berkeley-square. Coleman was rewarded for his courage and success by obtaining the hand of Miss Porter, and the two were married on the 28th of April, 1791.

When Hannah More describes the occupation of her hero, "Florio," she writes:—

"His mornings were not spent in vice,
'Twas lounging, sauntering, eating ice;
Walk up and down St. James's-street,
Full fifty times the youth you'd meet."

It was about the middle of the eighteenth century when the shops began to make a better show in their windows, that the street became the fashionable lounge *par excellence*. Fox was one of the most noted of the loungers, and in Tickell's clever lines he is made to express to Lord John Townshend his regret at "the long-lost pleasures of St. James's-street." Fox, although negligent and slovenly in later life, was, when young, one of the greatest bucks of his day, and one of his biographers describes "Beau Fox" as "strutting up and down St. James's-street in a suit of French embroidery, a little silk hat, red-heeled shoes, and a bouquet nearly large enough for a maypole." Sheridan sings of,—

"The Campus Martius of St. James's-street,
Where the beaux' cavalry pace to and fro
Before they take the field in Rotten-row;
Where Brookes's Blues and Weltze's light dragoons,
Dismount in files and ogle in platoons;"

and the statesman Windham relates of himself and friends that returning one night from the House of Commons they amused themselves with throwing stones at each other in the park, and oranges when they came into St. James's-street. The chief characteristic of this street is to be found in the number and importance of its clubs. Some of these grew out of the coffee and chocolate houses that were once so popular,—as, for instance, White's, and the Cocoa Tree.

The immense change that has taken place in the habits of fashionable society is very strikingly brought before us when we find that the very sober and aristocratic club—White's—has grown out of the gaming-house denounced by Pope and Swift as the rendezvous of infamous blacklegs, and introduced by Hogarth into his "Rake's Progress," as a likely place for a highwayman to frequent. About the year 1698, White's Chocolate House was founded, near the bottom of the west side of the street, on the site of the present "Arthur's Club-house," and a few years afterwards Steele announced, in the opening number of the *Tatler* (1709), that "All accounts of gallantry, pleasure, and entertainment shall be under the article of 'White's Chocolate-house.'" On April 28th, 1733, the house was entirely destroyed by fire, and Arthur, the proprietor, moved to Gaunt's Coffee-house, next door to the St. James's Coffee-house, where he begged that the noblemen and gentlemen would "favour him with their company as usual." Much valuable property was destroyed in the fire, notably the collection of paintings belonging to Sir Andrew Fountaine, valued at 3,000*l.* King George II. and the Prince of Wales were among the spectators on this occasion. Soon afterwards the club was formed, in order to keep out the

common herd of gamblers, but the change did not result in a higher tone of morality, as may be guessed from the following picture :—

"From hence to White's our virtuous Cato flies;
There sits with countenance erect and wise,
And talks of games and whist, and pigtail ties;
Plays all the night, nor doubts each law to break,
Himself, unknowingly, has help'd to make;
Trembling and anxious, stakes his utmost groat,
Peeps o'er his cards, and looks as if he thought;
Next morn disowns the losses of the night,
Because the fool would fain be thought a bite."

Colonel Lyttelton, brother of Sir George Lyttelton, wrote, in 1752, the "Gamester's Address to the King on his Return from Hanover," which was supposed to be presented by the members of White's Club. In 1755, the Club was removed to the present house (Nos. 37 and 38), on the east side of the street, the front being designed by James Wyatt. Various alterations were made by Lockyer in 1850, when the four bas-reliefs of the Seasons were added, from the designs of George Scharf. When Almack started his club (afterwards Brooks's), in 1764, the worst gamblers went off there,—

"From White's we'll move the expensive scene,"

and the remaining members were jealous of the new rival. The Earl of Carlisle wrote to Selwyn on January 9th, 1768, asking him to put the Marquis of Kildare up as a candidate, but added, "Take care he is not put up first at Almack's, as that excludes him from White's." The list of celebrated men who have been members would be a long one, but a few names may be mentioned here, such as those of the Earl of Chesterfield, Bubb Dodington, Prime Minister Pelham, George Selwyn, Colley Cibber, Fox, Wilberforce, Pitt, and Rodney. Arthur was the first proprietor that we know anything of, for no particulars of White have come down to us. Arthur died in 1761, and was succeeded by his son-in-law, Robert Mackreth, the well-known "Bob." Martindale was the proprietor in 1784, and became a bankrupt in September, 1797. Ragget kept the club in 1812, and afterwards left it to his son. The freehold of the house was sold by auction on March 7th, 1871, by Messrs. Chinnock, Galsworthy, & Chinnock, of Waterloo-place, and excited considerable competition. The rental derived from the club was fixed at 2,100*l.* for eleven years, after which the lease expires. The property realised the large sum of 46,000*l.*, and the purchaser was Mr. H. W. Eaton, M.P.

The "Cocoa Tree" was a famous chocolate house in the reign of Queen Anne, chiefly known as the resort of the Tories and Jacobites. After it had been turned into a club, Gibbon joined it, and he describes the appearance of the members in the year 1762 as follows:—"This respectable body, of which I have the honour of being a member, affords every evening a sight truly English. Twenty or thirty, perhaps of the first men in the kingdom in point of fortune and fashion, supping at little tables covered with a napkin, in the middle of a coffee-room, upon a bit of cold meat or a sandwich, and drinking a glass of punch. At present, we are full of king's counsellors and lords of the bedchamber, who having jumped into the ministry, make a very singular medley of their old principles and language with their modern ones." The Club was at one time a favourite resort of the Prince of Wales (afterwards George IV.). Samuel Spring, a waiter, once had occasion to write to the Prince, and commenced his letter as follows:—"Sam, the waiter at the Cocoa Tree, presents his compliments to the Prince of Wales," &c.

As already stated, Brooks's Club (No. 60) was originally established, in 1764, in Pall-mall, on the site lately occupied by the British Institution, and upon which the house of the Marlborough Club was built in 1868. Almack's was noted for its deep play, and Horace Walpole tells us that the members played only for rouleaus of 50*l.* each, and 10,000*l.* in specie was often on the table at one time. In 1770, when C. J. Fox was a Lord of the Admiralty in Lord North's Government, the clerks were forced to wait upon him at the club to obtain his signature to warrants and orders. He is said to have preferred losing to not playing at all, and he was often gratified in this way, as appears from some verses written at the time of his greatest losses:—

"At Almack's of pigeons I'm told there are flocks,
But it's thought the completest is one Mr. Fox,
If he touches a card, if he rattles a box,
Away fly the guineas of this Mr. Fox."

One year after the opening of the club, Almack built the Assembly-rooms in King-street (now Willis's), and in 1778 Brooks, a wine-merchant and money-lender, took Almack's Club, and removed it to St. James's-street. The old house in Pall Mall continued to be occupied as a club, and was known as "Goosetrees." The new house was built at Brooks's expense from the designs of Henry Holland, but soon afterwards Brooks retired from the management because the club did not pay, and he died poor in 1782. Burke, Garrick, Hume, Horace Walpole, Gibbon, Topham Beauclerc, Reynolds, Sheridan, Wilberforce, Pitt, Fox, Windham, Sir Philip Francis, George Selwyn, Dunning, the Duke of Queensberry, and George IV. (when Prince of Wales) were members. On one occasion two friends of the Prince's were blackballed, which so offended his royal highness, that in 1788 he founded (in conjunction with his brother the Duke of York) Weltzie's Club on the west side of the street, in opposition to the old club. Weltzie was the Prince's cook, and from him Peter Pindar (Dr. Wolcot) obtained his chief anecdotes of George III. for the "Lousiad," &c. Brooks's has always been the rendezvous of the Whigs, and, in spite of the Reform Club, it still remains so. A few days after Pitt's first speech in the House of Commons on February 26, 1781, Fox brought him into the club, and in spite of his change in politics, he continued a member and paid his subscriptions until his death.

Boodle's Club, known as the "Savoir vivre" (No. 28) was established soon after Brooks's. Gibbon and Wilberforce were both members, and the first time the latter entered the house he won twenty-five guineas from the Duke of Norfolk.

Crockford's (No. 50) was called a club, and such men as the Duke of Wellington, Prince Polignac, Talleyrand, Pozzo di Borgo, Esterhazy, D'Orsay, and Horace Twiss were members; but it was unlike the clubs already noticed, and nothing more than a gorgeous "hell." The members played against the proprietor, who kept the bank. John Crockford originally kept a small fishmonger's shop in the Strand, near Temple Bar. He then became a player at the silver hazard-tables and at No. 28, Haymarket, then called Dirty Shirt Coffee-house. About 1802 he began to bet at Newmarket, and in 1827, he built the most splendid "hell" in London, and "won all the disposable money of the men of fashion in London," which allowed him to "cash a cheque for 100,000*l.* with as much ease to himself as the Bank of England would." Some members did not play, and they were mostly induced to join the club by the elegance of the *cuisine*. Ude, the *chef* of *chefs*, was cook for a time, and was succeeded by Francatelli. The Hon. Grantley Berkeley relates an amusing story of Ude's coolness. One day a member ordered some new potatoes from the bill of fare, but as they were not forthcoming, he directed the waiter to tell the great man that he required his presence. Ude came, and the member blew him up for not having furnished what was ordered. The cook defended himself with amusing volubility, and insisting that there were new potatoes, he disappeared. He shortly returned with a covered dish in his hand, which he opened, and, letting out the steam, discovered to the member the vegetables he had ordered, all the time protesting against his being accused of neglect. In the midst of his protestations he backed towards the door, through which he and the potatoes disappeared, leaving the member to admire the audacity of the cook in taking away the delicacy he was longing to enjoy. Crockford retired in 1840, and soon after died worth 700,000*l.*, after having lost as large a sum in mining and other speculations. His death is said to have been accelerated by fears as to the issue of the "Derby." The club-house was sold, and on the closure of the old club a Junior Crockford's was started in Bury-street with the object of replacing it. In the year 1849 the house was occupied by the "Military, Naval, and County Service Club," which had a short life, and was closed in 1851. Then came the "Wellington Dining-rooms" and the "St. George's Club," and in 1873 the appearance of the front was entirely changed by the substitution of a new coating of stone for the old stucco, which was cleared away. This new house was opened by the Crockford's Auction Hall Company, which opened with an imposing list of patrons and directors, but enjoyed a very short life. The building is now occupied by a new club called the Devonshire Club. When Crockford's was at the height of its prosperity, the next door (at the corner of Bennett-street) was taken by Ephraim Bond and his brothers, and opened as a gaming-house, called "Ragget's Junior." Bond, whose doings are sketched in the Prime Minister's novel, "Henrietta's Temple," first kept a "hell" in Duke-street, which he moved to 26, St. James's-street, and called "The Athenæum." From the latter house he moved to the immediate neighbourhood of Crockford. It was once said by an admirer of these two men that Crockford was the Napoleon and Bond the Wellington of the play world.

The modern clubs are much more luxurious resorts than the mean houses that satisfied our forefathers, but the mansions of Pall-mall and St. James's-street will probably never gather around themselves a tithe of the associations that cling to the Old Thatched House Tavern. The name recalls the time when the street was but little built upon, and when the house itself was a wayside inn, with a common thatched roof. This tavern was long the favourite meeting-place of convival societies. The Brothers' Club, a literary society, which preceded the Scriblerus Club, consisting of Swift, Arbuthnot, Harley, St. John, and the Tory magnates met here in 1713. The Dilettanti Society, established in 1734 by Viscount Harcourt, the second Duke of Dorset, Sir Francis Dashwood, and other noblemen and gentlemen to the number of fifty, met here till the house was pulled down a few years ago. Fines and penalties were here rampant; thus any member who called the Society a club was fined a guinea, and a payment was to be made "on increase of income by inheritance, legacy, marriage, or preferment." When Lord Grosvenor married Miss Leveson Gower he paid five guineas, Lord Sandwich was twenty guineas the poorer on account of his accepting the office of Ambassador to the Congress of Aix-la-Chapelle, and Bubb Dodington was mulcted of ten guineas when he was installed as Treasurer of the Navy. When Fox was made a Lord of the Admiralty he was fined nine pounds nineteen shillings and sixpence.

The Noblemen's Catch Club, established by the nobility and gentry for the improvement of vocal harmony, met at the Thatched House, in 1762, and flourished for many years. It was a law that each of the forty-four members should possess 500*l.* a year in land, and sufficient talent to take part in a glee. The members dined together every Tuesday from January to June, and twenty-one of the first professional singers were admitted as honorary members.

Johnson's Club, the Literary Club or *The* Club, removed here from Parsloe's on February 26, 1799, and in 1857 the Royal Society Club transferred their dinners from the Freemasons' Tavern on the removal of the Society from Somerset House to Burlington House. The Pow Wow Club, which numbered among its members John Hunter, Dr. Baillie, Sir Astley Cooper, Sir Everard Home, and Sir Gilbert Blane, held monthly meetings at the Thatched House. The club originated with Dr. Patrick Russell, author of a work on the serpents of India, and an intimate friend of John Hunter, who suggested the name as an appropriate one, the word "pow-wow" meaning a meeting of conjurors. Like the Dilettanti's, they expected that when any honours fell to a member he should treat the dinner party to champagne. Sir Astley Cooper gave the whole club a dinner on being made a baronet in 1821. In 1830 it was found that so many of the old associates had died off that the survivors determined to dissolve the club in 1830. Lord Campbell, in his Life of Lord Thurlow, gives an amusing anecdote of the rough chancellor's wit. In the debates on the Regency a certain prim peer, noted for his attention to etiquette, having pompously cited some resolutions passed by a party of noblemen and gentlemen at the Thatched House, Lord Thurlow, on rising, said, "As to what the noble lord in the red riband told us he had heard in the alehouse," &c. The poet Campbell saw Byron eating a hearty supper of meat and drinking a bottle of claret here just after he had left Rogers's dinner-table, where he would condescend to eat nothing but vegetables and drink nothing but water. A part of the tavern was cleared away to make room for the Conservative Club and the remainder for the Civil Service Club, which afterwards changed its name to the "Thatched House Club."

The St. James's Coffee House was the head quarters of the Whigs when the Tories frequented the Cocoa Tree. It was situated at the south-west corner of the street opposite to the palace, and has an interesting history, but it owes its chief glory to the fact that Goldsmith's remarkable piece of character painting called the *Retaliation* grew out of some meetings of the poet and his friends in its rooms.

Before concluding we have still to mention a few noteworthy houses, such as Pero's Bagnio (No. 63, now Fenton's Hotel), a fashionable bath-house set up about the year 1699; Siam's, an Indian house kept by a Mrs. Siam for the sale of teas, shawls, and Indian toys, which is mentioned by Southerne, Cibber, and other writers of Queen Anne's time; and Felix Rowland, the hairdresser's little shop, where he made a fortune by the sale of macassar oil, which nestled beneath the front of the old Thatched House Tavern.

In Horace Walpole's time, No. 62 was a favourite lounge of the men of fashion, who went to the shop of Mrs. Elizabeth Neale, the queen of applewomen, to learn the news,—

> "There at one glance, the royal eye shall meet
> Each varied beauty of St. James's-street;
> Stout Talbot there shall ply with hackney chair,
> And patriot Betty fix her fruit-shop there."

She died on the 30th of August, 1797, aged sixty-seven, at her house in Park-place, fourteen years after she had retired from business. Gillray lived at No. 29, and from his window watched the men he was so successful in caricaturing. His prints were exhibited in the shop below, which was kept by his indulgent landlady, Miss Humphry. These prints attracted so great a crowd that the pedestrian was often forced to quit the pavement for the carriage-way as he passed the house. From an upstairs window Gillray threw himself, in a fit of insanity, and he died of the wounds then received.

John Sherwin, the engraver, lived in St. James's-street, and here in 1782 he painted, engraved, and published a glorious portrait of Mrs. Siddons, in the character of the *Grecian Daughter*. J. T. Smith, the author of "A Book for a Rainy Day," relates how he as boy assisted Sherwin by pulling up and down the blinds, so as to throw the great actress into different lights. Much more might be added about the loungers in this street, and such inhabitants as Gibbon, who lodged at the house of Elmsley, the bookseller, afterwards pulled down to make room for the Conservative Club; but a book could easily be filled with the history of the street that looks down upon the royal palace of St. James. No more characteristic view is to be seen in London than that which meets the eye as one stands at the Piccadilly end of the street. There is here a remarkable mixture of architectural effects, and plain houses with red tiled roofs join on to the palatial fronts of the clubs, the old gate at the bottom filling up the view with happy effect.

CURRENT CONVERSATION.*

Still speaking of the "Model Bye-laws" issued by the Local Government Board:—

With respect to Party-walls the suggested amendments are of little if any importance. To continue our comparison with the French capital, the laws of the *mitoyenneté* are there very strict. No flues whatsoever are permitted *within* a party wall; they may be built against it, but the whole average thickness of 18 English inches, or thereabouts, must remain solid and intact from the foundations to a certain distance above the external line of the roof. There are relatively fewer party-walls in Paris than in London, for the narrow frontages of houses in this capital are unknown in Paris; and, obviously, thick party-walls from which flues and fireplaces are entirely excluded would be too extravagant in houses of 20 ft. or 25 ft. frontage. But in spite of what is averred to the contrary, party-walls in England and even in London are often subjected to much contemptuous manipulation by persons who, in a laudable desire to economise room, forget that they are breaking the law. The flue of one house is brought up in a party-wall to within 4½ in. of the inside of the other; and there are cases where in the fireplaces only half a brick separates one house from another. The "recessing" of party-walls is here also permitted under certain conditions, so that though 18 in. and even 23 in. may be the official thickness, large portions of a party-wall in a large building may be made much thinner, and with the consent of authority. The "Model Bye-laws" do not attempt to obtain the immunity from sharp practice which the Paris laws of *mitoyenneté* secure. Though one bye-law forbids any opening to be made or left in a party-wall,—and thus prevents the creation of lights,—another permits recesses both in party and external walls, provided the back of the recess be 9 in. thick, and that an arch be turned at every story over such recess. The English rules for party-walls may perhaps be deemed sufficient while houses both in and out of London continue to be arranged on the vertical plan of habitation; but if the erection of private dwellings of broad frontage and extreme height,—upon the horizontal system,—be imminent in Central London it may be convenient to inquire into the Parisian formula of *mitoyenneté* and the practice of maintaining a certain thickness of solid material perpendicularly between each block.

The Free Circulation of Air around, and the ventilation within, a new building are touched upon in the suggested bye-laws; and perhaps it is too much to expect that any law or series of laws will ever provide a complete remedy for the suffocating process which slowly but surely attacks an island of old houses in the heart of the metropolis. Originally, say, twenty private dwellings have been built upon a triangular or an oblong piece of land, so that the internal yard, divided among the twenty dwellings, is effectually hemmed in on all sides to a height of say 40 ft. The dwellings change hands, the use and character of the streets surrounding them change with the deterioration of the neighbouring highways. The private houses become shops; the floors over are let to lodgers as sets of chambers, as business offices, as warehouses, or as residences for small families. An extra story is added to one house; the neighbours follow the example, and soon the internal yard is more thoroughly enclosed by the walls and roofs of houses some 50 ft. or even 60 ft. high. Then the yard of one house receives a flat roof, with a skylight over; the extra ground-floor room is invaluable, and the neighbours are not slow to make use of the open space at the back of each house. Then leases fall in, and perhaps a "limited" company takes half a dozen houses at one corner of the triangle, and covers the whole of the ground-space occupied originally by the six yards of the six houses, not with a one-story building rising simply to the height of the yard wall, but with a big block some 30 ft. or 40 ft. high. This is done by arrangement with adjoining and opposite owners. The company does not build a new building; it simply makes an addition to an old one, and for that reason it is possible to block, bit by bit, the larger part of the interior of an island of old houses. This process has been going on for years, and it is still going on in and around highways like the Strand and Piccadilly, so that often the back rooms of London houses receive air which, without absolutely stagnating, circulates and re-circulates within a certain confined space,—a through draught being impossible. Neither the actual Building Acts nor the "Model Bye-laws" cope with this constantly-recurring difficulty; and, as far as we can perceive, there seems to be nothing to prevent new buildings being erected in such a manner as to prevent the free draught of air in the internal yards. We should like to see some legislation directed against the practice of entirely closing an island of houses, thereby obstructing the admission to back rooms of fresh air, except, perhaps, that which can descend from between the chimneys and roofs. All that the "Model Bye-laws" do is to prescribe a certain amount of open space both before and behind a new building, and suggest that no alteration or addition shall at any future time diminish the extent of that open space.

While the Admission of Air to the required clear space of 3 in. between the under-side of the joists, beneath the lowest story of a building, and the upper surface of the asphalte or concrete which covers the site is the substance of a bye-law, nothing is said of the time-honoured custom of admitting air between the slender joists, between the unjointed boarding, and the cracked coat of ceiling which forms the horizontal division of domestic buildings in London, and, indeed, in England generally. Perhaps one bye-law, if taken literally, would partly prevent such floor ventilation: by it the open space inside any partition, or between the joists, in any wall, is to be stopped with brickwork, concrete, pugging, or other incombustible material at every floor and ceiling. This, of course, is what is always done in good building; but we should like to see a clause whereby it would be compulsory to fill up with concrete or pugging the space between each joist over the whole surface of each floor division. It is just this space, ventilated, as it usually is, in London houses, that increases the dangers of destruction when a fire has once broken out. Captain Shaw has laid great stress upon the fact in the books, pamphlets, and reports he has written; and we have quoted an opinion, officially recorded, of the "Associated Architects" in the year 1793. It was therein stated that in London fires were more frequent and destructive than anywhere abroad. "The great principle of prevention," said the Associated Architects, "is to stop the progress and circulation of the air in all parts of a building *concealed from the eye*." This remark, it would seem to reasonable men, is indubitably exact; but for nearly a hundred years after it was printed, the custom of keeping the concealed portions of buildings suicidally permeated with air, which is as much the breath of fire as of life, has continued.

The Fact that Central London is principally inhabited by separate floors,—not by whole houses,—is ignored by all the Acts in force relating to building and metropolitan management; no mention of it occurs in the "Model Bye-laws." New houses, intended to be let in "flats" or in separate sets of rooms, are in course of erection; many have not only been erected, but they are now filled with contented occupants. It is said that houses arranged in this manner,—that "associated homes" and "hotel-mansions" are taken by eager tenants before even the building itself is terminated. In such buildings the floors are really party walls horizontally instead of perpendicularly placed. The Building Act faces these eventualities in a magnificently contemptuous fashion. It implies, in its own technicalities, which we choose to translate into the language of men of the world, the following:—that, unless bachelors, families, or groups of individuals, inhabit a building containing more than 125,000 cubical feet of space, the floors of lobbies, corridors, passages, landings, and flights of stairs,—the horizontal party divisions generally,—shall consist of inflammable materials; and that unless sets of chambers or "flats" cover 3,600 ft. square in area they are not to be divided by party walls, party arches, or party floors. There is nothing suggested in the "Model Bye-laws" to remedy the above defect or rather absence of legislative acumen. New buildings intended to be let by floors have just risen in Parliament-street: their façades are of stone, and the Paris houses have served as models for their designers. They look substantial enough, but the party-floors are of the same character as that with which the Londoner for generations has been familiar. They are precisely the same as those which a hundred, fifty, ten, years ago,—and this year,—divided and divide the drawing and dining rooms from the bedrooms of a suburban villa. No account is taken of the fact that the different inhabitants of the house will be, in habits, occupation, and perhaps position, entirely distinct from, and opposed to, each other; yet the law says all these diverse groups are one family, and it proceeds to catalogue them as one "risk," to use the fireman's phrase. We repeat, on this score, the same words, almost from volume to volume; for we find that, with patience and the decent lapse of years, our suggestions are often recognised as exactly the right thing to do. We repeat, that in none of the great cities of Europe are floor-joists and boards, such as are daily constructed in London, to be found.* English joists, a few inches deep by 2 in. thick, are covered at the top with rough boards gaping at the joints, and at the bottom with strips of wood embedded in a coarse mixture of inflammable mortar. The inner space between the coat of the ceiling and the covering of the planks is hollow and ventilated. In Central London, as a rule, one floor division resembles another, and the ignition by fire of one implies the destruction of that above it.

Legislative Talent in the matter of building technicalities generally, and of fireproof materials in particular, has not reached a high state of development. The wits of St. Stephen's urge the use of "stone or any *other* fireproof material"; the "Model Bye-laws" prescribe stone (it may be inflammable limestone, or the softest and most perishable sandstone) as the proper material for a template, block or slab, on which still more treacherous iron is to be laid. We repeat that the British constructor has not yet succeeded in making an ordinary and a cheap

* See p. 970, *ante*.

* See "Concrete as a Building Material"; *Builder*, vol. xxxiv., p. 502; also "A Book on Building," same volume, p. 1160, third column.

party-floor division, even as imperfect as that which has long secured to the Parisian almost immunity from fire; and this is due, perhaps, as much to the predominance of native legislation as to the absence of native plaster or gypsum.

Listen to Captain Shaw:* "No fireman has ever seen a stone stair escape when subjected to much heat"; "no internal wall supported on iron can be relied on where there is much heat"; "at the present moment (1876) may be seen at the corner of two streets a new building, recently erected, 90 ft. long, 24 ft. deep, and from 70 ft. to 80 ft. high, supported entirely on iron columns without any wall, wood, or brick work reaching to the ground along the whole line of front. *At the ordinary temperature of from* 600° *to* 700° *Fahrenheit, the whole building must inevitably fall down*, and such a temperature could easily be created by the combustion of a small quantity of furniture." In fact, as we have rarely of late years ceased to reiterate, not only does rigorous custom, both in public and private buildings, make the task of a London fireman one of a needlessly dangerous character; but even the law of this country is ranged on the side of the destroyer. We fail to perceive that the "Model Bye-laws," from which undoubtedly a revised Building Act will soon spring, attempt to open the difficulty of fireproof construction. One or two expensive varieties of stone resist fire; but no structure is fireproof, or even fire-resisting, which depends for support upon ordinary stone or naked iron. Concrete composed of materials which have already passed through the fire, well-burnt bricks and plaster, are fire-resisting; indeed, to all purposes, fireproof. The framers of Building Acts and model bye-laws should really make a note of things generally known.

When a new Bill upon Building is presented to Parliament it would be well if the framers of it would try not only to simplify, but to combine the past laws, injunctions, and restrictions, which now have to be sought for in more than one place and one Act. If the authorities of districts throughout the United Kingdom are permitted to make their own bye-laws with the confirmation and approval of the Local Government Board in London, one imperial Act, embracing the general building regulations of Great Britain, will surely suffice. Mr. Honeyman, in his excellent suggestions for a new general Act, proposed to call it "The Boroughs General Building Act." He also proposed that "no buildings should be exempt from the operations of the Act"; and with reference to the necessity, more particularly in the provinces, of deposing whole sets of drawings at the offices of corporation or borough surveyors, he urged that the present system simply resulted in the accumulation of carefully-prepared drawings for no utility whatever; that, in fact, they were mere rubbish-heaps. Mr. Honeyman's paper is well worth re-reading by members of the profession before they begin a possible discussion on new and necessary laws. We quite agree with him that it is not wise to interfere with the building trade in too paternal a manner. That is an axiom of British rule almost everywhere; but, nevertheless, we would protect life at the risk of deviating a little from established custom. No Building Act yet devised has gone far enough to protect life in the heart of cities. A fair start upon right, sensible, general principles, and the power of local modification and application, are what is wanted,—not a whole array of abstruse details, which confound and astonish by their perverseness much more than they arouse respect for the learning, artistic and mathematical, of the legislator, at least, in the minds of those practically concerned with architecture and building.

* See p. 74, *ante*: "Theatres, the Law and the Lord Chamberlain."

PARK GATEWAYS.

Every one who is fortunate enough to appreciate the picturesque of effect and of association, knows how much of either kind of interest is contributed by the entrance gateways of old family estates which form incidents in a drive along an English country road. These are mostly in more or less classic taste, for it was only in post-Gothic times that the domestic landscape, as one may call it, of the private park, came into being as an essential feature in connexion with a country residence,—an appendage of the "mansion" which succeeded to the "castle." There are instances where attempts have been made to preserve the castellated style, the outer signs of feudalism, when the reality is extinct; and very unfortunate is the effect. If thoroughly carried out, the structure has a forbidding and inhospitable aspect; if badly and insufficiently done, it looks simply futile. But the old classic park-entrances exhibit a great deal of variety, and it is surprising how well they seem to group with English park scenery and foliage. We find sometimes a solid and dignified structure, like the one (no matter where) which suggested these desultory remarks; a mass of solid ashlar masonry on either side of the gateway, variously grey and green with lichen moss, divided out into regular cubes by the thin black lines of jointing, from which the pointing mortar has long disappeared; heavy solid-looking half-columns, with Ionic capitals, forming the main decorative feature in either block; and through this framework of masonry we look down the vista of a long straight drive thickly bordered with trees in the rich tints of autumn foliage, or interspersed with dark evergreens. The house to which it leads is concealed from view, so that there is about the effect something suggestive to the fancy,—a pleasant touch of theatrical unreality; the road may lead anywhere,—to some enchanted palace if we like. The columns seem to form a kind of proscenium ornament, and we might expect to see the hero and heroine of the romantic opera pass across between it and the back scene.

But perhaps we are getting a little too fanciful; all we mean to say is that the effect is very charming, both to the eye and mind, and that it is worth while to notice how much may be made out of such merely necessary facts as a gateway and a road to a house. And, in fact, the associations connected with these specimens of gateway architecture are really domestic rather than melo-dramatic. The family arms, the family motto, more or less ingeniously introduced on the piers, or in the design of the gate, constitute not a little of the picturesque sentiment connected with them. But there is a great deal of variety of architectural treatment and design to be met with amongst them. One shows a heavy and massive pediment with an arch under it for the gateway. Another aims at elegance and grace, not without a certain stateliness too, and the gate is flanked by a light, open colonnade, on a semicircular plan, terminating in the gate piers, the cornice and blocking of which are carried also round the semicircle, and form at either extremity of it the pedestal for a couchant stag, which will probably be found to be better carved and more artistic in feeling than one would at first expect. This semicircular type of entrance, providing a wide space between the public road and the gate, is a not uncommon form, and is always effective in general appearance, giving a look of spaciousness and dignity, whatever may be thought of the details. In another we find a different, a more homely but still dignified character imparted by a heavy rusticated architectural treatment, not so refined and stately certainly as the columnar architecture, but having a character of its own, peculiarly English; heavy piers crowned by an urn and a wreath, or a nondescript dog or lion with a shield, and more picturesque no doubt in its weather-stained green and black and grey condition than when fresh from the mason's hand. Yet in most of these show structures there is a largeness of scale in the detail, and a sort of execution entirely the reverse of "scamped," which gives them a satisfactory and thoroughly architectural expression: and the sculptured accessories generally are by no means despicable in style and execution. In regard to this last point we certainly have not improved upon our ancestors in decorative treatment of entrances, except in some very special cases in which ability of a high class has been employed upon the sculpture: and truly at this moment we hardly recal any such case. We do recal instances in which the effort to do something unusual in the way of sculptured decoration in such positions has resulted in the most dire vulgarities, though it is right to add that these are probably not chargeable upon the modern architect, but rather result from the desire to try how he can be dispensed with. It is a trifle off the line suggested by our title, but we cannot help noting a contrast between old and new taste in the matter of gateway decorations which may be seen in the once-Classic ground of Regent's Park. The older terraces along the east drive, parallel with Albany-street, exhibit a good deal of the old Classic and not over-convenient formality of design, but they are not without dignity of arrangement; and in the case of Chester-terrace, which stands back from the road, there is something really effective in the large entrance archway, flanked by Classic columns, through which access is obtained at either extremity to the terrace-drive. A little way below Chester-terrace, with its pediments, and "orders," and "attics," according to rule, is a large terrace of new houses, of a would-be-Gothic type, staring and obtrusive in style, also with its drive and its entrance gateways, on each of the piers of which have been set three wonderful females, back to back, in classic drapery, and depicted with what has evidently been intended for a smile of welcome on their lovely countenances; but, whether owing to the carver's (we cannot say "sculptor's") innate vulgarity of conception, or his inability to realise his intention, the smile takes the form of a leering smirk of enticement, which certainly would be, as we heard a lady resident of the neighbourhood complain, "absolutely improper" if it were not a little too ridiculous for that. Such a piece of vulgarity as this would, at all events, have been impossible in the period when the gateway designs of which we have been speaking were produced.

In recent days we have taken more to Gothic entrances, and these have this advantage, that if there is a house flanking the gate at either side, it can be obviously shown as a house or cottage, and not disguised behind a screen of Classic podium and column and cornice. The Gothic entrance may be said to be more domestic in character, and no doubt it may be so designed as to combine dignity with this, but too often it is but a mean and characterless erection, wanting in largeness and breadth of treatment; an impression still further emphasised by the effect of gates of elaborately twisted and spiky iron-work, which have an appearance quite out of keeping with the traditional sentiment of an English country mansion, importing into its environs suggestions of Birmingham, and an appearance of ostentation and unrest, a desire to be handsome, which is what the old style of gateway seldom or never suggests.

The entrance gateway is an opportunity for much that is novel and at the same time graceful and dignified in design; and towards realising these qualities in the approaches to modern mansions there is a good deal to be gathered from the study of those of the last and the early part of the present century. We may not imitate their details or the faded character (artistically speaking) of their ornamental accessories; but in regard to general treatment they afford much suggestion. Two things are to be observed in contriving park entrances,—that they should always be so planned as to give a wide space in front of the gate, and throw the latter well back from the road; and that if an arch is thrown over the gateway, necessitating somewhat large erection, it should be flanked in its immediate vicinity by walls sufficiently high and important to give something like an adequate support to the entrance, and give a kind of reason for the arch. A lofty arch set up to drive under, with only a low fence or wall on either side of it, looks absurdly pretentious and unreal, unless it be a *bonâ fide* triumphal arch. The addition of a lodge or house on either side as part of the design, and incorporated with it, gets over this difficulty, and furnishes the requisite *appui* to an arched entrance; but it is hardly justifiable to make houses which are not really wanted, for this purpose of mere effect, as we sometimes find them. On the whole, except in cases when the thing is done on rather a large and stately scale, it is perhaps well to let a gateway be simply a gateway, and trust for effect to the way it is arranged and led up to, and the manner in which the architectural details flanking it are treated.

By way of a new idea, however, for this kind of design, we have sometimes thought that the Indian gate-pyramids afforded a suggestion worth working out in another form, and with another class of detail. Such an idea would be only suitable, of course, in connexion with the grand entrance to a large and stately domain, in which case the pyramid might have an architectural meaning, as serving to indicate from a distance the position of the main entrance. There are many other forms of gateway design existing in the architecture of various countries and nations, which would afford opportunities for a fresh point of departure in the architectural embellishment of an entrance; but those of our own country merit more attention than they have received, and often afford very pleasing specimens of purely artistic architecture.

a

NOTES IN THE ART DEPARTMENT AT THE ABERDEEN CONGRESS.*

The paper by Mr. Forbes Robertson on the question of competitions in art may be said to have been a very fairly successful attempt to make a good paper out of a very unpromising subject: the fact being that it is hardly possible to have any but one opinion on the main point, that the throwing open of artistic work to public competition has a healthy and stimulating effect, and has been the means in past and recent times of bringing forward great artists who might otherwise have had to wait many years for recognition, and of bringing about the production of great works which we might otherwise never have had at all. We need only refer to Stevens's Wellington monument as an instance in recent times. Mr. E. M. Ward brought forward instances in which all the successful competitors were men who had made a name previously; but these instances only show that there was no further genius waiting to be evoked in those special cases; that is, if we assume that these competitions were conducted with absolute freedom from partiality. Of course that is the really important point, about which a great deal of difference of opinion is possible as to the ways and means of securing the best result. Mr. Robertson rightly emphasised the importance of remunerating competing artists for their work, and not leaving them to the chance of entire throwing away of time and labour. Mr. Statham's paper on the subject of "Art-Furniture and *Bric-à-brac*," was a protest against reducing art to the level of mere decoration, placing china and furniture above the more intellectual arts of sculpture and painting; and was, we believe, partly suggested by the idea that this furniture notion of art was too much brought forward in the Art-Section of last year's congress at Liverpool. We print the paper, which may speak for itself. The second day's proceedings of the Department were closed by a short paper from Miss Burton, on the subject "Is Beauty incompatible with Labour?" which was a protest in favour of endeavouring to improve the æsthetic condition of the labouring classes, pointing out that in many parts of the Continent the ordinary working dress of the common people was highly picturesque, and was an object of study to artists on that account, while in England and Scotland it was in most cases quite the reverse. The point of Miss Burton's paper in regard to this topic was that in this country persons whose vocations compelled them to wear a special dress were troubled with a false shame of the working costume, did not care to be seen in it, and took no trouble to make it agreeable to the eye. The one exception was in the case of artists, who required a special dress for their labour, but had no objection to be seen in it, and took pains to make it picturesque. The conclusion to be drawn was that, if people were not ashamed of their labour, and did no labour that they need be ashamed of, they would probably be led to endeavour to render the conditions and surroundings of that labour picturesque and pleasing. Miss Burton also referred to the extreme ugliness of buildings for works of manufacture in Great Britain, and the squalid character of the homes of the operatives, in contrast with the palatial mansions of the proprietors of mills and employers of labour, and urged that it would be more fitting and more in accordance wish the demands of true philanthropy that a proportion of the wealth spent on beautifying the house of the owner should go to improving and rendering more picturesque the manufactories where the labourers worked, and the homes in which they lived. The paper, though short, and a little rambling in character, contained some important suggestions, and gave rise to an animated little discussion, chiefly carried on by the ladies, who here for the first time took a part in the proceedings of the Art Department, though the President had before invited their co-operation. Miss Becker in particular made an admirable speech, among other things referring to the desirability of artistic study of dress on the part of women, who, she complained, were expected to look ornamental in their surroundings, and yet were often most inconsistently found fault with, and charged with frivolity for caring about dress. Other ladies spoke well, and to the point,—not always (if we may be permitted to say so) illustrating their remarks by their own costumes, if artistically considered.

The paper by Mr. J. F. White on the question of the best means of introducing art into the homes of persons of limited income, was, perhaps, the best—it certainly was at once the most elaborate and the most directly practical—of all the papers read in the Art Department. We have already printed this paper, which was illustrated by a great number of specimens of various methods of producing works embodying true art—in many instances of a high character—at low prices. These included casts of sculptured work (concerning which Mr. White was a little more enthusiastic than we should be, as we cannot ourselves get over the disagreeable tone and surface of plaster, however faithfully it reproduces the forms of the original), engravings, etchings, photo-lithographs, photo-gravures, autotype reproductions, and pottery ware,—making quite an art-exhibition in themselves.

The meeting was by far the most fully attended of any of the departmental meetings; the large room in which the art section met—the largest in the building—being crowded, and the interest shown in the subject proved that the Art Department had got a hold over the attention of the visitors. A pretty long discussion followed; in the course of which Mr. E. M. Ward gave some particulars as to the intended formation of a school of tapestry design and manufacture at Windsor (which, perhaps, scarcely came under the head of art for "persons of limited income"), Mr. Aitchison made a pointed and clever speech, suggesting among other things that an even more difficult task than getting art *into* the houses of persons of limited income was that of getting vulgarity and bad taste *out* of the dwellings of many wealthy persons; and Mr. Statham added to some general comments on the paper a few words as to the Association, which had been formed by Miss Octavia Hill, in London, under the title of the "Kyrle Society," with the object of bringing beauty and decoration into the houses of the poor, and into hospitals and workmen's clubs, &c. The concluding paper of the Art Department, on the Treatment of Granite as an Architectural Material, fell a little flat, owing to the determined silence of the Aberdeen architects, who, with the single exception of Mr. Arthur Clyne (the local hon. secretary of the Art Department), seemed to regard the treatment of the subject by strangers as a kind of unwarrantable interference.* The paper was read by Mr. J. J. Stevenson, who in the main took the line of recommending the sternest and simplest treatment of the material, as one which was entirely unsuited to elaborate decorative design, though one of the grandest of building materials when treated simply. Mr. Clyne took exception to viewing granite as a material having any special difference from other building stones, except as regards mere hardness, or requiring any special treatment; a view in which we cannot quite concur with him. Mr. Statham agreed with Mr. Stevenson in deprecating the extensive use of polished granite in external architecture, and strongly urged more attention to the polychromatic effects to be attained from the use of granites of various qualities and tones; drawing attention to the admirable collection of specimens of granite in the Museum of Practical Geology in Jermyn-street, where almost all the existing varieties of granite, from all parts of the kingdom, could be seen and compared in contiguity and their capability for decorative effect estimated. Our own views on the Aberdeen granite architecture generally were expressed sufficiently not long ago. In concluding our remarks on the Art Department, it is only right to add a word in praise of the regularity and punctuality with which Lord Ronald Gower performed his duties as president, and which the local papers contrasted strongly with the irregularities and changes of chairmen in some other departments.

Among the special objects of architectural interest in the Old Town should be noted the chapel of King's College, less known, but even more interesting to the architectural eye, than the tower, whose remarkable crown finial makes it so conspicuous an object. The chapel is a quiet, small building of late date (*circa* 1500, the foundation of the college), but with architectural characteristics quite different from those which generally belong to Gothic architecture of this date in England. The external design shows, instead of the hard thin lines or over-florid ornament of English Perpendicular work, a plain solid massive bit of building in which the chief effect is given by the picturesque treatment of the buttresses in regard to outline and proportion.

An architectural question touched upon incidentally in the Art Department was the rebuilding of the spire of the West Church, a large cross church standing a little way off Union-street on the north side. This had a curious and very picturesque short timber spire on the crossing, which was burned not long since, and the project now is to build a large and lofty granite spire in place of it. This has involved casing and strengthening the old arches in order to fit them for the additional weight; and the conservative section of art-lovers in Aberdeen are very indignant both at the spoliation of the internal architecture and the substitution of a granite spire instead of the re-building of the old one in the same style as before. We had not opportunity to examine the interior of the church so as to pronounce any decided opinion as to the right or wrong of what is being done inside; but in regard to the mere question of external effect we think our Aberdeen friends are in the wrong. The old spire, judging from drawings, was very curious and picturesque, but quite out of keeping with the style of the substructure, and now that it has unfortunately perished, no good purpose, architectural or archæological, would be served by building an imitation of it. As a new spire has to be built, it will be better to build one in accordance with the style and material of the rest of the church; and the lamentations on this head seem to be misplaced.

Aberdeen seems to be well off for public entertaining rooms, in proportion to the size of the town. The "County Hall," contained in the Municipal Buildings, is a splendid room, with a lofty open timber roof, and the "Town-hall" (which term is here applied to a room, not, as usual, to a building), placed *en suite* with it, and in which the General Council meetings of the Congress were held, is a smaller but very good room, decorated with armorial bearings and portraits of eminent Aberdonians. But in connexion with these, and capable also of being thrown *en suite* with them, is the series of rooms belonging to Advocates' Hall; and at the *conversazione* of the 21st, when the President of the Art Department delivered his address, there seemed quite a maze of apartments and corridors for perambulation by the guests. The Music-hall buildings form another very large and commodious suite of apartments, whose capabilities were well tested at the *conversazione* on the 25th, when the guests were entertained with music, an exhibition of the telephone by its inventor, and an exhibition of microscopes and astronomical instruments; the latter lent and lectured on by Lord Lindsay. As to the various entertainments, public and private, much might be said. The Lord Provost's dinner in the County-hall, on the 20th, was one of the best of dinners, if not accompanied always by the best of speeches. Among the invitations issued on a large scale was one from the Earl of Aberdeen, who received some 200 of the visitors at Haddo House, on the afternoon of the 25th. The house is reached from Udny station by a long drive through the dreariest of countries over very heavy roads, but the park is a fine piece of enclosed scenery, and the house (*temp.* George II.) finely situated, and characteristic enough in its way as a piece of solid domestic architecture of the period. It abounds in Lawrence portraits; but the most interesting artistic object is the portrait of Guizot when a young man, painted by Delaroche, and presented by Guizot himself to the late Earl. The most successful of all the festivities of the week, however, was the excursion by a number of the visitors to Aboyne Castle, at the invitation of the Marquis of Huntly, whose courtesy and geniality, wherever he was concerned in the proceedings of the Congress, will be remembered with pleasure by all connected with it. After lunch at the Castle, a drive up Glen Tanner, through the deer forest, and along the banks of the beautiful Tanner stream, was organised and taken part in by a large number of the guests, who, on the return drive, were welcomed to tea at the pretty shooting-lodge of Mr. Cunliffe Brooks. These were only the more prominent instances of the open-handed and really magnificent hospitality which the members of the Congress met with on every hand during their stay, and which will not be forgotten by those who passed so pleasant a week in the fine old city which bears on its arms the (in this case at least) happily appropriate motto of "Bon Accord."

* See p. 973, *ante*.

* We are informed that the leading architects of Aberdeen had been solicited to read a paper on the subject, but all declined.

THE PROGRESS OF THE HEALTH QUESTION.

Mr. Edwin Chadwick, C.B., in his address, at Aberdeen, to which we have already alluded, submitted what he considered, from his own point of view, the present position of sanitary science, and its future practical advancement. We print some salient portions of it:—

A Stationary Death-rate with a Largely Increased Population, a Reduced Death-rate.

It has been recently put forward by a gentleman who held this chair at Liverpool that notwithstanding all the expense incurred by local authorities for sanitary works, there has been little alteration in the death-rate during the last forty years. In great part this is true, and I may show why it is so; but the figures are misleading, for with an increase of the population during that period, from about fifteen to twenty-two millions, with extensive conditions of overcrowding of dwellings of the wage classes, and of cottages which formerly served for one family, but which have now frequently one family to each room, there have been argumentations of death-rates at many points, insufficiently countervailed by reductions at others. It will be found that a stationary death-rate is relatively to a largely increased population, a reduced death-rate. But the statement is, as I shall show, so couched as unjustly to depreciate our increased power of sanitation. Then we have had the doctrines of Malthus raised against us, and it is held forth that by increasing the population we shall by division diminish its subsistence fund and intensify misery. In my service in poor-law administration I had to deal practically with those doctrines. In one county we at once struck off 10,000 able-bodied men from the pauper-roll of out-door relief in aid of wages. The Malthusians declared that wages must be reduced by that measure, and that its working must be horrible. But lo! wages, instead of falling, rose higher than they had ever been before. In the very county where the objection was raised the population had been increased during the last half-century from half a million to upwards of two millions, wages have been doubled, and until the late check to manufactures and population, productive population had become scarce, as I foretold it would be. I might add that if by sanitation the population were increased to the extent foreboded, why then, as it is estimated that of the habitable parts of the globe only one-sixth is really believed to be inhabited, we shall have sufficient outlets for the superabundance of a strengthened population. Noting the fact that at the period of the promulgation of the population doctrine, epidemic visitations were regarded as "positive checks," absolutely unpreventible and uncontrollable,—I beg attention to the progress made in the development of the powers of sanitation, especially as bearing on those visitations. In our first meeting at Birmingham in 1856, Lord Stanley, now the Earl of Derby, referred to my official Report of 1842, on the sanitary condition of the labouring population, in terms with which subsequent dedications to me of works on the subject,—of which I prize most the dedications by officers who have served with me,—have concurred, in accepting that Report as the starting-point of public effort in sanitation. I therefore propose to submit examples of the development of those powers since that period. Our general death registration is defective in itself, and it is yet more defective for this purpose, because in the same registration districts houses situate outside sanitary works which have had no amendment are mixed up with others in areas which have been so amended, and it is hence very difficult to obtain distinct and just conclusions in respect to the results of such works. We may, however, see more clearly the operation of principles, and obtain more satisfactory conclusions, by observing their working on similar classes of persons in similar conditions, as in the army and the navy; or in public institutions under professional observation and care. It is to such instances that I beg to solicit attention. And first as to the prevention of the greatest sources of preventible diseases, "the children's diseases" and "children's epidemics." . . . . .

Normals of Sanitation obtained by Improved Civic and Private Construction.

I now proceed to notice the normals of sanitation evolved by local or private effort.

In about thirty of the smaller towns sanitary works were attempted by local authorities, on lines laid down by the first General Board of Health, for systematic sanitation, namely, by the removal of damp by the drainage of sites with permeable agricultural drains,—by pure supplies of water, if possible from spring sources, delivered direct into houses on the constant system of supply, without cisterns and without waste,—by the constant removal from within the house of all putrescible or fœcal matter by the watercloset, together with all the fouled water from the kitchen and the laundry, from the house, through self-cleansing house-drains,—by the constant removal of such matter from beneath the site of the town through self-cleansing sewers, and by the constant and direct application of all such foul or waste matter as was removable in a liquified form (perfectly fresh) or free from advanced decomposition, as manure on to the land for agricultural production. There was to be no stagnation anywhere, no time given for advanced decomposition, and no production of putrid sewer-gases to be discharged either into the houses or into the streets, or above them into the general atmosphere. Normals of the self-cleansing sewers, and of the application of the sewage to the land, were separately considered, and separately established at great pains. Trial works were got, as to the forms, sizes, and inclinations of channels, that should be self-cleansing with the least quantity of water. Our objective points of sanitation were, first the house, next the street, then the town area, and last of all the river. It was established that as a rule pure supplies of water could be brought to the door for rates amounting to a penny a week, and carried into the house for another penny per week; and the waste water of the scullery or the laundry removed for another penny; and the cesspit abolished and the watercloset added for another halfpenny, or in the whole threepence per week, or a halfpenny per diem, for a complete system, in which there should be no putrid sewer gases, and in which you might test the competency of the sanitary engineer by the smell. We showed that three houses and three towns could be sewered well at the cost heretofore incurred for draining one town ill on the old plan of brick drains of deposit and large man-sized sewers of deposit, which were only extended cesspools for the generation of putrid-sewer gases. At these prices works were done then, and allowing for the advanced price of labour, may be done under competent administration now. To this work for the removal of putrescible matter from within houses and from beneath streets and towns, was added the covering of footways and the roadways of streets with some impermeable surface, and the cleansing of it by a jet of water from a hose and hydrant, to be used on occasions for the extinction of fires. In blocks of houses and whole towns cesspools have been removed, and water carriage through the water-closet, with self-cleansing drains and self-cleansing sewers have been substituted. Physicians in practice in such localities have testified on their experience, that house to house as the improvements were completed, and the atmosphere of the house was altered, low headaches were removed, the appetites improved, and the symptoms premonitory of advanced disease were abated, and that their practice was largely affected. But it is difficult to get satisfactory statistical estimates of the results, because they have not been regarded by the local authorities, and the returns are not available distinctly for the houses where sanitary alterations have been made, and even in respect to the towns where such works have been effected, the registration includes outlying houses and undrained detached villages, which are unimproved. Nevertheless, in the statistics for the places where the works have been carried out in principle, even in a rudimentary manner, reductions of death-rates by one-fourth, and even by one-third, are frequently shown. In 1866, an examination of twenty-five of these towns was made by the Medical Department of the Privy Council, but without a due knowledge, as it appeared to me, of the nature of the works or of what was to be expected from them, or of their defects. It came to my knowledge subsequently that the works of some of them were grossly defective, and wretched rooms and room tenements had remained unimproved. Nevertheless, the general results obtained were reductions of the general death-rates (after excluding smallpox and infantine epidemics) about 12 per cent., of typhus fever 41 per cent., of phthisis in a number of cases more than 40 per cent., and of diarrhœa a mean of 18 per cent., and a reduction of the general death-rate of more than 9 per cent. The commentary by Mr. Simon was, on these results, that "they may serve to fulfil very important provisional uses, not only to confute persons who have despaired, or affected to despair, of any great preventibility of disease, but still more to justify in the public eye and to encourage in some of the noblest of human labours those who for long weary years have been spending their powers in this endeavour, and to whom it will be the best of rewards to see the demonstration of the good they have wrought." More is to be lamented for the good that has been frustrated, than is to be rejoiced at for the shortcomings obtained, and it will be proper in the interest of the future, to display hereafter the obstructions continued against the extended applications of settled principles of sanitation. But for the present I must confine myself to the showing the progress of the power of sanitation, and the demonstrations of distinct normals. For the reasons heretofore stated, I deem the available statistical evidence derivable from the experience of whole, even of improved towns, at present insufficient to display the full power of sanitation. In my experience, however, the statistics may be inferred from the aspects of the places, and from the aspects of the people. After traversing different districts and observing the difference of their conditions as to cleanliness, drainage, and other sanitary points, when I have been enabled to get out the statistics of the death-rates street by street, I have found they have corresponded closely to what might have been anticipated from their relative conditions. Nay, from the contrasts of the classes of destitute orphan children in the district half-time schools, I could anticipate, where there were marked contrasts in their conditions, very much of the different death-rates of the places whence they came. And here I would mention an experience from my own observation. I have been in the habit of visiting those institutions at long intervals of time. At a late visit to one of them, I was struck with the improvement of the type of the children. I observed to the manager, "Why you have a different class of children to those I last saw here. Where do they come from?" The answer was, "They come from the same districts, the lower districts, but since sanitary improvements have been made in those districts, we are getting a different type of children, as you see." I found that the medical officers as well as managers of other institutions confirmed these observations by similar experiences. Others than myself have made the observation that since the clearances of bad dwellings, and the wider spreading of the wage classes in Paris, that they are changing that leathery complexion, so much like the inner soles of old shoes, which they formely had, for one clearer and fresher. This is in accordance with our anticipations, and it is satisfactory to observe distinct appearances of their realisation for future promise of large improvements in the types of populations.

I should anticipate with confidence from such appearances a reduction of the death-rates to be marked by statistics if they were got out. The blocks of model dwellings in London, erected by voluntary associations, present better observed and clearer instances, serving to some extent as normals of the preventive power of sanitation. In these, the death-rate ranges separately from 14 to 17 per 1,000. I assume that in the metropolis 16 per 1,000 may be taken as the mean death-rate of similar improved habitations; that, I need not say, is an important advance upon the general death-rate of 23 in 1,000. But a death-rate, which is a mean of the deaths of a large city, is almost always a delusive misrepresentation, especially of the extremes. Thus we have part of a sub-district in London, comprising houses in good condition, where the death-rate does not exceed 10 in 1,000, whilst there are adjacent dwellings chiefly occupied by the wage classes, where the death-rates from year to year keep up to the extent of 38 per 1,000. Important returns, with which I am favoured by Dr. Russell, the medical officer of health of Glasgow, show, for the last year, a range of death-rates, from one district at 15 in 1,000, to another district at 40 in 1,000. Now, a mean of these two, or the general mean (25 in 1,000, with sub-districts of 17 in 1,000, 24, 26, and 33 in 1,000), is a misrepresentation of each. It has lately been proved that in some of the dwellings condemned under Mr. Cross's Act, the death-rates were as high as 50 and 60 in 1,000. It has been objected to the conclusions from the lower death-rates in the model dwellings that the people living there are generally of a better

class in position and habits. The answer is, that if the same people were taken into inferior tenements their habits would deteriorate, as the habits of artisan families from the rural districts deteriorate, whatsoever may be the increased amount of wages they obtain. But the power of sanitation is displayed upon people of the lowest condition in the metropolis, namely, the tramps who occupy the common lodging-houses, regulated under Lord Shaftesbury's Act. These places were formerly distinguished for the first outbreaks of typhus and epidemic diseases. Drainage, water supply, and the means of cleanliness and ventilation are now enforced, and overcrowding is prevented in them, and they are now distinguished by an immunity from common epidemics. Medical officers of the districts where these lodging-houses are situated have testified to the better sanitary condition of their occupants than of the wage classes dwelling under the jurisdiction of the common vestries. Dr. Russell states to me that "in the large model lodging-houses of the Corporation a case of fever is the greatest rarity, and it never spreads. In the common lodging-houses belonging to private individuals, we have fever oftener, but there again it never spreads;" that is to say, as it does in defective houses of the wage classes. "We are informed of a case at once, and remove it immediately to the hospital. Fever of any kind never spreads in any of our institutions where I can do as I please to cut it short." Why should not similar protection be extended to the wage classes? Accepting my normal of sanitation in the prison, Dr. Russell says:—"If I had perfect command over all the Irish in Glasgow, as the governor of a prison, I would reduce the death-rate one-half in five years, and in less time than that, I expect." On the whole, death-rates in the model dwellings may be fairly placed in opposition to the common death-rates prevalent amongst the wage classes of the metropolis, where it is upwards of 30 in 1,000; or, as an example, of a gain of one-half upon that special death-rate by the power of sanitation. His Majesty the King of the Belgians has offered an international prize, which is calculated to be of high service, as conducing to a better determination of the power of sanitation, and its vindication before Europe. He offers "a gold cup of the value of 5,000 francs to that municipal or local authority, or private association, which shall, by an improvement of the dwellings of the wage classes, effect the greatest reduction of their death-rates at the lowest cost." So far as the powers of sanitation have been exercised, it would appear he adjudged that this prize might fairly at first view go to a private association at Frankfort, for their model dwellings, of which Dr. Varrentrapp, a leader of sanitation in Germany, gives me the statistics, showing an average death-rate under 10 in 1,000 for the last fifteen years. But an instance is stated by Dr. Latham, the medical officer of Salford, which, if correct, would gain the cup for England. It is of a block of model cottages, a model village, erected for the workpeople of Messrs. Price & Co., near Liverpool, where the average death-rate for the last five years has been 8 in 1,000.

On a review of the facts I have adduced, I think I have proved that by sanitary measures it is quite possible to reduce the death-rates under such regulations. I state that we can so arrange common conditions to multiply the most fatal orders of disease, and that we can command conditions as effectually to prevent them. If I might resort to the Hindoo mythology, as formulating or embodying maleficent and beneficent principles, I may say that if Siva the Destroyer were to require it, we could certainly build a city in which we could ensure a death-rate of 40 per 1,000, or far more than double the general mortality of the country. For that purpose we should copy literally and closely the old parts of Whitehaven, those of Newcastle-upon-Tyne, and the wynds of Glasgow and of Edinburgh, which I have heretofore traversed, and some edifices in Paris and Berlin, and some tenement houses and crowded slums reported of in New York and Boston. I have asked relieving officers in London whether they could take a dozen cabs and fill them with fever cases, of which particular cases they had received no special notice. Yes, they replied; they could readily find enough, though they might not be quite sure of the sort: the cases might be of typhus, they might be of scarlet fever, they might be measles, they might be small-pox. But some cases of eruptive diseases they were sure to find. Let those places be looked to and copied. There were, and are, instances even of particular houses, which the medical officers were sure would be the first to be attacked on any renewed epidemic visitation. There was one house, or street, in York, which we were informed by tradition was the first attacked by the great sweating sickness; then the first by the great plague; and lastly the place which cholera selected on its first visitation to this country. On the second visitation during my service we had an outlook whether the place would be true to its traditions, and it was so! Let that be copied. As a short cut to get at the places for sanitation, I have instructed sanitary inspectors to go into the primary schools, to put aside the most squalid and inferior children, ascertain their residences, and examine them. They have done so, and as a class they have found the most wretched tenements to be the fever nests of the city. I remember that Dr. Lyon Playfair, then a pupil in sanitation, told me that he had, with other visitors, acted on this suggestion, and noted amongst the class of squalid children two whose faces were blotched from disease. They found that their habitation was over the confluence of a discharge of putrid sewage. Let such places, too, be included. By copying these places, and repeating these conditions with fidelity, we may insure with certainty that more than half those born shall be in their graves by the fifth year, and that those who survive shall be stunted, squalid, and irritable and weakly. We may, by such insanitary conditions, reduce the proportion of the aged, and of the middle-aged, and of persons of mature experience, and increase the proportions of the young and of persons of immature experience, to the rest of the community. We may reduce the steadying influence of experience, and augment the preponderance of passion, and of blind impulse. We may, by the excessive sickness and death-rates, produce a sense of the shortness of life, of its pains, and its worthlessness, and generate a reckless avidity for immediate gratification; such as that which characterises inferior soldiers in time of war. We may, indeed, compound a "hell broth" of "powerful trouble" to the police, as well as to the administrators of relief to human misery. We may produce such results; for they are produced from such conditions, and are displayed in outbursts that alarm and endanger the negligent administrations under which they have arisen.

On the other hand, if the beneficent principle worshipped as "Vishnu the Preserver" should command, we can undertake to erect a city which shall in time be the reverse of all this, and in which the death-rate shall not exceed 10 in 1,000 or one-half of the general average of sickness and mortality, a city which shall be as fever-proof as we have made our orphan half-time asylums and our prisons, without, indeed, materially altering the popular habits, except as to overcrowding; with houses freed from the cesspool smell, from the bad drain and the sewer-gases, from the damp wall and from the foul wall-smell and from wall vermin, from stagnant and vitiated air, and from the too prevalent exclusion from sunlight,—houses that should, by their construction, be cool in summer and warm in winter, with good water-supplies undeteriorated by bad modes of delivery. I say with confidence that we might insure an advance upon the hitherto normal death-rate of 15 or 16 in 1,000 of the present model dwellings, because those dwellings are, in my view, not yet up to the principles of construction, as the Prince Consort's model dwellings were, in some important points.

Moreover, that reduced death-rate of 16 in 1,000, as against 40 or more, good though it is, must be considerably affected by the condition of the general urban atmosphere in which they are situated, as well as by particular insanitary conditions. As to the general urban atmosphere, surgeons will be well aware that if an accident requiring a serious operation were to occur to the occupier of any of those urban dwellings, his chances of recovery would be considerably improved by removal into a purer suburban atmosphere. With respect to the conditions of urban and country hospitals, a celebrated physician remarked, "In the city hospital-ward the most expert surgeon cannot cure, whilst in the country hospital-ward the greatest bungler cannot kill." Of the particular insanitary conditions to which the occupiers are mostly exposed, are air tainted with sewage-gas from bad general drainage, and, indeed, much sewer-tainted water, by the dung-dust of ill-cleansed streets, befouling skins and clothes, by the children being compelled to go to long-time schools, and to be massed together with filthy-skinned children, the centres of children's epidemics, and by the adults being compelled to labour in ill-conditioned workshops not under the Factories Regulation Act. By the elimination of these insanitary conditions, a reduction of the death-rates of the model dwellings by fully one-third may be confidently assured. It might, indeed, be anticipated that some approach might be made, as to children, to the condition of the half-time schools, or, as to the adults, to the sanitary conditions of those great normas of sanitation, our prisons,—that is to say, a condition in which, two years out of every three, there should be, as it were, a sanitary jubilee, in which there should be no disease and no death, a condition under which all men shall attain the promised term of three score years and ten.

It is not, however, necessary to wait for the construction of Hygeias, to make advances in urban sanitation. What has already been done in old cities, such as Salisbury, where the death-rate has been reduced from some 28 in 1,000 to 17 and 18 per 1,000; what has been done with the common lodging-houses; what has been done with blocks of buildings in the metropolis and in Glasgow, warrants the conclusion that specialists as sanitary engineers might now contract for the attainment of important sanitary results. I am confident that data might be given for the reduction of the death-rate of the metropolis, from 22 to at the most 17 in 1,000, and for the reduction of the death-rates of provincial cities in the manufacturing districts in yet greater proportion.

Excessive sickness involves premature working disability, as do premature mortality and excessive pain and misery involve definite pecuniary loss which the political economist may estimate. On definite data, I have heretofore estimated the money loss from insanitary conditions at about 15,000,000*l.* sterling per annum. It must, however, be much more than that. Happily, this sum capitalised would, under economic rule, amply suffice, in most cities, to defray the expenses of proper works by which the existing insanitary conditions might be removed and a pecuniary gain in productive power effected.* * * * *

Mr. Chadwick, in concluding his important address, submitted the following summary of the results obtained of the progress of the power of sanitation, deducible from the normal instances he had adduced, or of which, from want of space, he had been obliged to content himself with giving indications for examination:—

1. That we have gained the power of reducing the sickness and death-rates in most old cities by at least one-third; or, as a rule, of reducing the death-rates in old British urban districts to 16 or 17 in 1,000.

2. That in new districts, on sites apart from old urban sites, we may, with a complete arterial system of water supply and surface-cleansing,—including measures for the prevention of overcrowding,—ensure reduction of death-rates to less than one-half, or to a mean rate of 10 in 1,000, and the sickness in the like proportion.

3. That in well-provided and well-regulated institutions for children from three to fifteen years of age we may secure them an immunity from the common children's epidemics and reduce the death-rates to a mean of about 3 in 1,000, or to less than one-third of the death-rates prevalent amongst children of those ages in the general population.

4. That in prisons and places under effective sanitary control the death-rates (from disease) have been reduced amongst persons from the school ages and upwards to about three in 1,000, or to one-third of the death-rates prevalent amongst the general population of the same ages.

5. That to the persons in such institutions an immunity may be given as against all ordinary epidemics, typhus, and the eruptive diseases, diarrhœa, and dysentery, which ravage the general population.

6. That amongst the general population a reduction by full one-half of the diseases of the respiratory organs may be effected by general public sanitation.

7. That complete habits of skin cleanliness, alone and apart from general structural arrangements, or alterations of habits in other respects, constitute a factor of about one-third of the power of sanitation.

8. That, by a proper selection and a due sanitation of sites in tropical climates, and the sani-

tary care of the population, the birth-rates may be made to exceed the death-rates, and a healthy succession, for colonisation, for people of the British or of the white races.

9. That by the increased health and strength imparted by improved physical training under sanitary conditions, on the half-school-time principle, in the infantile and juvenile stages, the efficiency of three for productive occupation may be imparted to every two of the most depressed classes of the population.

10. That the death-rates from disease in the mercantile marine may, by the exercise of the like powers of sanitation that are exercised in the Royal Navy, be reduced by two-thirds, or to the general death-rate now prevalent in the Royal Navy, namely, of about six in 1,000.

11. That,—as indicated by existing normals,—the greatly reduced death-rates in the army at home and abroad admit of important further reductions, by a more complete application of tried and approved means of sanitation.

IS THE PREVALENT TASTE FOR "ART FURNITURE" AND BRIC-À-BRAC INDICATIVE OF A SOUND OR HEALTHY ÆSTHETIC CULTURE?*

It appears to be generally assumed that there has been no little advance in English society of late years in regard to what is called "good taste," an expression often very vaguely used, but which we may take to imply the critical perception of the distinction between what is graceful and suitable in form and harmonious in colour in all the objects with which we surround our daily lives, and what is the reverse of all this.

This movement in the direction of good taste is, perhaps, hardly as general as is sometimes supposed. As far as we can judge, it has hardly reached the mass of the trading classes at all; and perhaps there are not a few among the professedly more cultured classes who are still sublimely indifferent to the designs of their tables and chairs, their carpets and wall-papers. But even these have to swim with the stream; and this indifference to the æsthetics of house furniture and decoration can hardly be openly professed by any who have the hope of social salvation before their eyes.

It would be very untrue to say that there is nothing to congratulate ourselves upon in regard to this recent outbreak of "taste." It is certainly a fact that we now not infrequently see rooms the *ensemble* of which is harmonious and grateful to our sense of colour, and in which there is no object which can be said to be in a tawdry or vulgar taste, and this is wherefore to be thankful. It is when we come to consider these results not absolutely but relatively,—relatively to the principle from which they appear to spring, on the one hand, and to the ultimate ends of art on the other hand, that we seem to meet with that which must give us pause.

The theory underlying this movement, with those who think about reasons and principles at all, is what has become almost a "Shibboleth" among art-critics of the day, that art and artistic feeling are as much shown in the design of furniture and other accessories as in what have been hitherto considered the higher or "fine" arts of sculpture and painting. The practical corollary to this is found in the existence of numerous establishments devoted especially to the production of what is termed "art-furniture.'

Now this phrase alone, so familiar to us in print and in conversation, constitutes in itself a begging of the whole question, an indication of a view of the subject radically false and unreal. A great Scotchman, John Stuart Mill, in his memorable address at St. Andrews (which suggests to us more about the true relation of art to our intellectual life than can be found in whole volumes of "art-criticism"), observed that art might from one point of view be regarded as the endeavour after the perfection of execution. The definition, at all events, precisely covers the section of the subject which we are just now considering. So far as relates to furniture—to the class of articles which are in the first instance for practical use, and only in a secondary sense ornamental,—that is truly artistic which is made, firstly, in the best possible way in relation to the use for which it is intended, and the material of which it is constructed; and, secondly, which expresses in the best and most graceful manner, in the shape and treatment of each portion, the motive and use of the whole and the special character of the material. We might say that when an object, a sofa, for instance, has the first of these qualities, it is workmanlike; when to these is superadded that of expression, or expressive execution, it may rightly be called artistic; but, in fact, the two qualities can seldom be separated or divorced. What is truly workmanlike is almost always artistic; what is unworkmanlike is invariably inartistic—unsatisfactory to our sense of beauty and fitness.

There is not, therefore, and cannot be, rightly speaking, any such thing as "art furniture," considered as a separate species of article: and to go into a cabinet-maker's and ask for art-furniture is as reasonable as it would be to go into a bootmaker's shop and ask for a pair of art-boots. The request in either case would in reality be for something made for another object than that or which it professes to be made—for show and not for use. In any sense in which the expression is worth anything, all furniture ought to be "art-furniture," and if it is not it is badly made. What is actually meant by art-furniture, as sold in the æsthetic warehouse, is furniture which is a copy of something else that was in fashion at some former period of our history. Much of what is now made as art-furniture, for instance, is in the style which has lately been distinguished as that of the "Queen Anne" period, which has superseded the Modern-Mediæval type, though there is combined with this a taste for furniture of a simpler (and, to my thinking, better) Old English style. A good deal of the furniture of these types is far more artistic and tasteful than that which was in vogue in the last generation, so that the impression conveyed is of a more or less general improvement of taste. But that this is to a great extent a superficial appearance is shown by the fact that the bad is taken along with the good. Were there space here to go into details of criticism, it would be easy to show that while some of the furniture work referred to is good, some of it is as bad and vulgar in taste as it well could be; but it is all alike accepted by the public, and recommended not only by dealers, but by writers and critics who aspire to guide public taste.

Indolence of mind, coupled with a desire for show, is at the root of all this. That which might be rightly called *artistic* furniture is valuable precisely in proportion to the thought that has been put into it; every detail should bear the impress of having been thought out in reference to the material and the use to which it is to be put. If it were usual to have furniture and other accessories so designed as to represent the thought of the workman and the individual taste of the owner, it would have a real interest; but this involves too much trouble. The manufacturer is content to take a certain style and reproduce it, and say "this is artistic"; and the purchaser, instead of cultivating his individual taste, and endeavouring to gratify it considerately and thoughtfully, so as to make his dwelling-rooms a part, so to speak, of his own individuality, is content with the easier task of paying his money, and taking what is set before him, furnishing his rooms after a pattern of a hundred years back, and sitting down and flattering himself that he has succeeded in being artistic, even sometimes at the expense of common convenience. If, for instance, you drop in to afternoon tea at an "æsthetic" house, you have your tea in cups without handles. Supposing, for the sake of argument, that the tea were hot (which æsthetic tea seldom is), you burn your fingers and nearly drop the cup; and then you are told, for consolation, that it is an artistic cup. If it were it would have a handle, for the natural and proper way of making an object that is to be held in the hand is to give one something to hold it by. Even Macbeth, at a moment when his brain was in a very disordered and disturbed state, still preserved sense enough to see his visionary dagger with

> "The handle towards my hand":

but then Macbeth was not æsthetic.

Even supposing, however, that the prevalent taste in furniture were logical and real in itself, there is a more serious question suggested by the importance attached to this class of work in comparison with what used to be considered the more intellectual forms of art. As was observed just now, it is almost a commonplace at present to urge that art is not confined to sculpture and painting, but should be shown in all the objects collected in a room, and that we should aim at totality of effect. If this meant that we were to bring furniture and decoration up to the level of the phonetic arts, in intellectual interest, there could be nothing to be said against it, except that it is hardly possible to do so. But the theory seems practically to result in an attempt to bring down painting to the level of furniture. A painting is no longer, according to this school of critics, to be a separate creation of the imagination, having its own interest and embodying its own idea, but it is to be a means of filling a panel as part of a scheme of decoration. It is probably to this theory that we owe the existence of a peculiar school of painting which has arisen lately, in which the object seems to be to eliminate all distinctive idea or intellectual meaning from a picture, and all direct reference to Nature, and to make the whole a mere matter of decorative colouring. The most common development of this form of art is familiar to most of us in the shape of those long-limbed female figures of neo-Greek type, clad in semi-diaphanous drapery, whose handsome faces have all the same placid vacuity of expression, and by whose side always stands an "art-flower-pot," out of which grows a decorative plant. Very graceful are many of them (for, indeed, some of our finest draughtsmen have lent their talents to this style of painting); and very tired we get of their grace and their meaningless poses. Their faces are all alike; but their lack of distinctive character is compensated for by writing their names beside them, always remembering to jumble the letters about so as to make the reading of it as much of a puzzle as possible. They may be either the Months, or the Virtues, or anything else you like, they will do equally well for either, and the same figure may represent either "Chastity" or "November." But if we are inclined to feel bored at this repetition of a type, we are offered as a compensation any amount of old china. A lady who professes to be artistic is not happy till she has given her drawing-room the aspect of a crockery-shop. You feel afraid to move about for fear of knocking over or shaking down something which you will be assured no money can replace. You go to the theatre to see a domestic comedy, and the actors seem scarcely able to find their way amid the collection of Japanese jars and screens, and blue china, with which the stage is crowded; and, to add insult to injury, if you do not like all this you are called a Philistine.

The nameless opprobrium conveyed in that phrase might seem more applicable to a man who follows a multitude to hunt *bric-à-brac* than to those who fail to find this a sufficient motive for living. But, without calling names, and admitting that every one has a right to his own hobby, I protest against the assumption that this worship of furniture and china is an indication of an advanced perception in regard to art. As with furniture itself, so with art in its widest sense, the ultimate value to us is in proportion to the thought that is in it; and it is idle to pretend that the most piquant piece of china, the most artistically-designed cabinet or wall-paper, can by possibility have the same intellectual meaning and interest as the productions of an art which, like painting, can translate the poetry of Nature, can speak to us the language of the deepest human passion and emotion. To say that such an art as this is to be no more to us than a part of the furniture of our rooms; that upon some pretext of unity of effect our pictures are to be merely objects subordinate to a general scheme of decoration, is not to exalt art, but to degrade it, and is a view which could only be seriously held by those who have allowed their mental sympathies and perceptions to be narrowed and cramped to suit a conventional standard. One figure in which the passion or the hope, the joy or the grief, of the human soul is visibly symbolised, one landscape instinct with the light and air and the sentiment of Nature, does more to give interest and beauty to a room than all the sweepings of Wardour-street that can be collected in it. A picture that is worth anything is not a piece of decoration, but a separate poem in itself; and it is better to have such works even in company with bad furniture, than to have a room filled with decorative furniture and piquant knick-knacks, but bare of anything that can appeal to our highest sympathies and aspirations as intellectual beings.

Yet this is what is actually set before us now as the theory of an artistic dwelling, and what it is actually becoming more and more the fashion to put in practice. And the fact has an important significance in relation to social science, so far as that concerns the moral and

* By Mr. H. Heathcote Statham. Read at the Social Science Congress, Aberdeen, as already mentioned.

intellectual aspect of our national life. It is a sign of something very unsound in the artistic taste and sentiment of the day that we should be exhorted systematically and on principle to rank the lower and more material forms of art as equal to or even above those which appeal to our highest consciousness and perceptions. It seems a very false economical principle, so far as regards the encouragement of art, that people should be ready to give for an old jar, which may be ornamental, but which may as likely as not be ugly and grotesque in design, as much as would procure them a dozen drawings or etchings representing a far higher intellectual effort applied to a far higher end. But what is most serious is the moral aspect of the subject,—the falsity and pretentiousness of feeling which this artificial taste indicates. What was observed in regard to the art of the theatre is only a type of what we see in society. The acting is so tame and unreal that it hardly deceives any one; but the play is admirably mounted, and the decorations got up regardless of expense. Only unfortunately the decorations themselves are a sham. We need by no means be indifferent to furniture; on the contrary, I would like, if it were possible, to see everything in a dwelling designed with a direct relation to its purpose, its position, the style of its accompaniments, and the special fancy of the inmates. But this is hardly attempted, for this would cost thought, and people wish to be artistic without thought, and at the cost of money only. What is really done is to fix upon a particular fashion of a past generation or of another country, to brand that as artistic, and to purchase as much of it as you can afford. The phenomenon is not new. There have been other periods in the history of our own and other societies when this imitation fashion has prevailed, and they have always been periods of pretence and hollowness, of an indifference to the highest and most serious ends of life. When people are much in earnest they do not care about tricking themselves out in borrowed decorations; it is an amusement for an idle hour; and the corollary to be drawn from the characteristics of the prevalent artistic taste of contemporary society is not a satisfactory one. It was the complaint of Wordsworth, at an early period of this century, that,—

"Plain living and high thinking are no more."

He would hardly have considered that matters were much improved in this respect at present, when Art, which should be the expression of the highest thought and aspiration of a people, is coming to mean a mere arbitrarily chosen form of costly luxury, having no connexion with the serious thoughts and problems of life; when, as it has been remarked, you may break any moral law, but you must admire blue china; when English ladies can so far forget their traditions of true dignity, so far mistake the accidentals for the essentials of refinement, as to masquerade in modern-antique costumes which draw every eye, not, indeed, to the wearer, but to the costume. All this, done in the name of art, is evidence not of true artistic feeling, but of a show and pretence at variance with what is best and noblest in art, which, if it were a reality, should lead us, to quote again the words of Mill, to idealise not only every work we do, "but most of all our own characters and lives." This is hardly to be achieved by dressing out our life in a costume of borrowed finery, and dignifying it by the name of "art."

HOUSE ACCOMMODATION; VENTILATION OF DRAINS; WASTE OF WATER.

In the Health Department of the Aberdeen Social Science Congress the meeting discussed,—"The present State of House Accommodation in Rural Districts—Can its Evils be remedied?"

Dr. Haviland, officer of health, Northamptonshire, said he had 365 towns and villages in his supervision, and it was a painful part of his duty to see the large amount of misery which existed in the labourers' cottages or wretched hovels spread over the thousand square miles of his district. He said that the landlords were to blame for this state of matters, as so long as they obtained their rents they did not seem to care in what state their tenants were placed. In some cases, however, the landlords were unable, owing to pecuniary difficulties, to effect improvements although they were willing, and he suggested that loans should be granted to these impecunious proprietors by Government in the same way as had been done some years ago with regard to the drainage of land, for the purpose of assisting them to build proper houses for their tenants. He said that one of the improvements which was most urgently needed in connexion with labourers' cottages was the abolition of the present system of piggeries, and the granting of licences to those who wished to keep them, in order to ensure the styes being kept in a clean and sanitary condition, which was very far from their present state in most cases.

Principal Brown said that Dr. Haviland's remarks applied exclusively to England, and the circumstances in that country were so very different from those in Scotland that he feared they could not have a discussion of practical value unless some statement was given about the state of matters in Scotland.

Lord Aberdeen said that, with reference to one point in connexion with the subject, there had been a good deal of difference of opinion. This question was as to whether houses for the accommodation of the labouring classes in rural districts should consist of two stories or whether all the rooms should be situated on the ground-floor. He believed it was generally recognised in England that the houses should consist of two stories, and that, at the time when there was a considerable increase of cottage buildings in Scotland under the auspices of the Inland Inclosure Commissioners, the same feeling existed. The opinion which, in his short experience, he would be inclined to form was that there was no intrinsic objection to having all the rooms on the ground-floor, provided there was sufficient accommodation, and for the reason that if it was the custom of any district or county to have upper stories in the cottages, those not accustomed to have an upper story would be apt to use the upper rooms, not for useful purposes of habitation, but merely as store garrets, leading to additional crowding on the ground-floor. Therefore, in the cottages which he had built himself for some years, he had generally adopted the ground-floor plan only, and he was bound to say that he had as yet not seen any definite reason to regret that course. At the same time, however, it would be interesting to hear the opinions of gentlemen of experience who had examined both systems.

Dr. Stevenson Macadam, in reading a paper on this question, stated that the subject was one which in its full bearings concerned architects, medical men, and chemists, as well as proprietors, tenant-farmers, and workmen. It was arranged that this paper should consider the chemical factors on which healthy homes depend. The family house was not only required for protection from weather and accommodation for eating and sleeping, but still more so for air supply, which was at the very root or foundation of all theory and practice as to the remedy for the admittedly defective state of the house accommodation in rural districts. The importance of the air factor might be judged of from the fact that the amount of air inspired daily by an adult man was about a million cubic inches, being more than 500 cubic feet of air, or fully 3,000 gallons. A great part of such air was, in ordinary circumstances, obtained from the outside atmosphere directly during the day, but at night, and especially during sleep, must be obtained from the house. Considering the women and children in average households, the air factor for each member of a family might be taken on an average of 300 cubic feet per day. The quantity of air actually inspired was not, however, the only point to be considered, because changes occurred in the air during respiration which seriously affected the wholesomeness of the respired air, and rendered it unfit for being again breathed in. These changes were mainly in a large increase in the amount of carbonic acid, accompanied (by organic *débris*, principally of a gaseous nature, and the air became thus of a more or less noxious character. This was enhanced by exhalations from the steam and from ill-washed clothing. Practically, the amount of carbonic acid might be taken as an index of the extent of the contamination, though it was not the only, or even the principal, cause of the mischief. In pure or normal air the proportion of carbonic acid was 1 part in 2,500, but in expired air the amount was about 1 in 25, and the air of crowded rooms became charged with the carbonic acid to the extent of 1 to 5 parts in the 1,000. Whenever these latter quantities were arrived at, the air of the room became close and fusty; and was beyond the limit of safety. Indeed, the proportion should not rise above 1 in 1,600, though, for short periods, a larger amount might be breathed. As each member of the population may be said to respire half a cubic foot of carbonic acid per hour, it would follow that such would bring to the specified limit of pollution about 2,500 cubic feet of air, provided that the apartment in which the person was placed was hermetically sealed. In all houses, however, the air was constantly on the move through the chinks in the doors and windows, porousness if the walls, draught in chimneys, &c.; and making allowance for such, the practical amount of air-space in houses might be limited to 800 cubic feet for each adult, or, at the lowest, to 500 cubic feet for each member of the family. Now, granting that an average family consisted of six members, then at least 3,000 cubic feet of house air space should be provided. This can be given in a house the inner capacity of which is 24 ft. long, 16 ft. broad, and 8 ft. high. Taking the length as 30 ft. the air space would be 3,500 cubic feet. No rural cottage for a family should have less than 3,000 cubic ft. of air space or air food. Other factors of importance in healthy houses were connected with water supply and drainage. Granting that the chemical factors are known to and acted upon by proprietors and others, there still remains the necessity of indoctrinating the people themselves with the knowledge that air which has been breathed is more or less hurtful, that fusty smells in houses are evidence of stagnation of air, and, indeed, of starvation in air; that windows are made not only to admit sunlight, but to admit air; and that whatever can tend to circulate air in houses, especially during the evening, as by throwing back the curtains of beds and leaving open the inner or room doors of all sleeping apartments, assists in supplying better and finer air food and in keeping the bodily system in a more thorough state of health.

The President (Mr. Chadwick) said that the question which had been raised by Lord Aberdeen was one of considerable difficulty, and was much affected by local conditions and circumstances as to the nature of the ground on which the cottages were built. In places where the ground was dry and the floors of the rooms and walls made impermeable to damp, it was perfectly safe to have all the rooms on the ground-floor, but in places where these circumstances did not exist, it was desirable that at least the bedrooms should be upstairs. As an illustration of the disinclination of the rural population to live upstairs, however, he mentioned that his father-in-law had erected two-storied cottages on his estate as an experiment, and had found shortly afterwards that the garrets were used as cock-lofts for the accommodation of the poultry. On expressing astonishment at that, the goodwife said that "Jock could not be fashed to go upstairs when he came home from his work at night." He recommended that concrete should be used in the construction of these cottages, as it was cheaper and more comfortable than stone.

The Rev. Dr. M'Leod, of Birkenhead, advocated the passing of a compulsory measure for the purpose of making landlords provide proper cottages for their tenants. He stated that in some districts where he had resided the people were obliged to live in habitations which were totally unfit for human beings to live in. These miserable huts should not be allowed to disfigure the land, and as the power for their removal could only come from Government, he urged that an Act was needed in order to compel landlords to do their duty. It would be unfair, however, to compel landlords to build houses which would not be reasonably remunerative, and therefore he suggested that the rents might be raised, and also the wages of the rural population, so that they could afford to pay higher rents.

Lord Aberdeen said that the paper which had been read by Dr. Macadam showed that the question under consideration was not so simple as it might seem at first sight. It looked very easy to feu a piece of land, and to employ a builder to erect a cottage at a certain figure, but there were in reality many difficulties and disappointments to be met with after the houses had been erected, including damp walls, smoky chimneys, &c. With regard to the former, he believed the evil could be remedied by what was called the "damp course," which consisted of a layer of asphalte or slates built into the wall, a few inches from the surface of the ground, and which prevented the damp from ascending. As to the difficulty of smoky chimneys, his lordship believed that it could often be obviated by putting the grate back a few inches further than

builders were in the habit of doing. With regard to concrete, his own experience was, that it was not so cheap in this district as to make it worth while using that material except where the gravel for the purpose was obtainable near the site of the building, because of the expense of cartage. His lordship said he had tried the system of wooden cottages with very satisfactory results so far as he could judge. The foundations were composed of brick or stone, the floor of asphalte, and the walls of two linings of wood filled in the middle with sawdust. He had been told by the people who resided in these wooden houses that they were warmer and drier than those built of masonry or of concrete. It might be objected that these houses were not sufficiently permanent, but certainly it appeared to him that if they could be built at about two-thirds the ordinary cost, they were worth being tried. In conclusion, the speaker said that it was quite true that landlords were disinclined to incur outlays in building cottages which would not yield a fair remuneration.

Principal Brown suggested that they should go to Parliament in the way of inquiry rather than of seking legislative compulsion on landlords to build houses.

Mr. W. Paul, advocate, entirely disapproved of the suggestion which had been made by Dr. M'Leod, that landlords should be compelled by Act of Parliament to build cottages on their estates, remarking that the proposal was very much like the operation of calling spirits from the vasty deep. If their deliberations were to be worth anything they must be practical, and the suggestion made by the rev. doctor was the very reverse of that.

Dr. Hardwicke moved—

"That this Department is of opinion that the Standing Committee of the Public Health Department should take into consideration what further legislative measures are necessary for the extension and improvement of the cottage accommodation for the rural population, and report to the next annual meeting."

And this was carried.

The Ventilation of Drains and Sewers.

Dr. Stevenson Macadam read a paper on the above subject. He said:—The present system of the disposal of the sewage of houses and towns is open to question in a sanitary as well as an economic point of view, as it undoubtedly leads to the poisoning of our streams, and the contamination of the air in the vicinity thereof. Indeed, there is abundant evidence to demonstrate that the water carriage system, with its attendant foul deposits in badly-laid drains, is productive of much illness and disease in households. At present, however, there is no other process suggested for the disposal of sewage which is less liable to objections for town purposes. Taking matters as they are, certain preventive measures may be adopted to guard against the evils of this mode of the disposal of sewage. These evils are mainly due to the production of sewage gases in the drains and sewers, and to the passage or escape of these gases into our houses. The primary cause of all the mischief is the lodgment of sewage in the drains and sewers, especially at the bends and in the hollows and depressions formed by badly-laid drains or badly-founded drains and sewers, and where the levels are either originally not attended to, or the subjacent earth has sunk or yielded below. Another source of the mischief is where the drains are imperfectly jointed and luted, and sand and earth fall in, tending to choke up the drain more or less, and either forming an elongated cesspool, or even forcing the sewage out of the pipes altogether, and saturating the neighbouring ground, which may be close to or underneath the dwelling-house. The main preventive measure ought to be to look well to the levels and thorough and efficient jointing, which would ensure the rapid and complete fall or run of the sewage from the house to the main drain, and thence to the point of disposal, either on land or in the sea. Part of this work would fall on the individual householder or house proprietor,—so far as the private or service drain is concerned, and the other part on the municipal authorities, so far as the main sewers are concerned. There are many instances in which the private or service drain has been shown to be at fault, and there are no doubt many cases in which the evil may be traced to the putrefaction of foul deposits lying festering and decomposing in the main sewers. Fresh sewage is comparatively sweet and harmless, and were it to have free passage onwards, it would keep fresh till it escaped from our towns, owing partly to putrefaction not having set in, and to the aëration and oxydation due to the oxygen dissolved in the body of water accompanying the sewage, and which would at the moment of liberation tend to oxidise or consume the escaping gases, and thus render them innocuous. The chemical nature of the sewage gases is generally misunderstood. It is commonly said that hydrosulphuric acid (sulphuretted hydrogen) and carbonic acid, which are readily recognisable in the emanations from decomposing organic matter, are the types of the noxious sewage gases. No doubt these gases named are destructive to life when in quantity, but I am inclined to the belief that the more noxious of the sewage gases are evolved at an earlier stage in the putrefaction of the organic matters, whilst the sulphuretted hydrogen and carbonic acid are produced at a later stage in the decomposition. In fact, I believe that the main danger lies in the earlier stages, when gases and vapours of a true organic and combustible nature are produced. In the investigations into the nature of the gases evolved from deposits in drains and sewers, which I carried out at the time of the Water of Leith drainage scheme, and which were embodied in one of the blue-books of the Sewage Commissioners, it was a rare thing to find sulphuretted hydrogen in the escaping gases, and the bulk of the sewage gases were found to burn readily, showing their carbo-hydrogen character. Moreover, any one who has inhaled sewage gas, either in our large sewers or when a drain is opened, knows that hydro-sulphuric acid (sulphuretted hydrogen) is seldom present; but, nevertheless, the gases exert a most debilitating effect upon the general health and spirits. In the majority of cases, and, in fact, with few exceptions, it may be said that generally no precautions are taken in the construction of house drains and their attachment to the main drains to prevent sewage-gas from falling back into our our houses. The water-closets have generally a direct connexion with the drains and sewers, and not only so, but the waste-pipes from the cisterns have in most instances a passage to the sewers either indirectly through the pan or bend of the closet or directly to the drains themselves. Taking the case of ordinary house service and connexion with drains as ordinarily practised, there is simply a bend put on the direct pipe laid to the main drain. The only security in such an arrangement lies in the water in the bend lying there in sufficient quantities, and not being forced by the pressure of gases in the main drain, or being emptied by the suction of the descending water, especially if there be two or more branch pipes discharging into the same house-drain. To remedy this evil it has been suggested, and is occasionally carried out into practice, that a ventilating tube is inserted in the service-drain. This single ventilation is a decided improvement, but taken by itself is not sufficient. Between the ventilating pipe and the sink or closet bend there should be placed in the service-drain a U-shaped trap, with upright drain-pipe leading to the surface, and in the throat of which there is inserted a wire cage containing fragments of dry charcoal. These upright pipes may rise above the surface when in open ground, or may be covered with a perforated iron plate when in outside passages or pavements. A still further improvement, where an open space or garden ground is at command, is to open up the drain for 1 ft., or so on the house side of the U-shaped trap. In all cases there should be a ventilating shaft or pipe carried from the bend of the closet or sink pipe to the roof of the house. This ventilating shaft or pipe may be a continuation of the service-drain. For the public ventilation of the street drains and sewers, the furnaces of public works, such as gasworks, should be utilised, where such are available, and open air-shafts should be carried from the main drains to the surface of the streets at numerous points. If the main drains are in good order, there need be no escape of noxious gases; but where deposits of foul matter are lying in the drains, charcoal cages may be used, though the true remedy would be the cleansing out and repair of the defectively-constructed main drain. Besides the ventilation proper of the main drains, there should be the periodic flushing of all main drains and sewers by the opening of sluices or valves connected with large cisterns placed at proper distances apart. A sudden rush or escape of a large volume of water down a sewer at a given time would float on all the solid *débris* lying in the bed of the sewer, and thus remove the cause of the production of the sewage gases. In regard to cisterns, the position of such is often objectionable, being placed over the water-closet, and the exhalations arising therefrom are absorbed by the water, which thus becomes tainted. Great mischief arises from the carrying of the waste-pipe directly or indirectly to the drains, and from the ventilation of the service-box into the cistern. Both the waste-pipe and the escape-pipe from the service-box should be carried to the open air.

Mr. Chadwick described a sewer as the bulb of a retort charged with decomposing matter, the neck of the retort being the drain carrying the products into the house, bringing disease into the premises, and strongly advocated the construction of entirely new sewers.

Mr. H. H. Collins, in the course of some interesting remarks, maintained that the proper system to adopt with regard to sewage was to separate the house entirely from the drains; and to have a separate cistern for water-closets. By a series of diagrams on the blackboard he explained his ideas, and his remarks were very cordially received.

Mr. Boulton, city surveyor, quite agreed with the remarks of Mr. Collins as to the construction of sewers. There was no doubt that many of their sewers were badly constructed both as regards size and level. In a flat running sewer where there was not a sufficient body of water the sediment deposited created sewer gas, which went generally to the highest point. He was, therefore, strongly in favour of the ventilation of sewers; and he had made up his mind that, in the proper laying of sewers, the first thing to be done was to cut off the house-drain from the sewer altogether.

Waste of Water in Towns.

Mr. Wm. Boulton, C.E., Aberdeen, read a paper on the above subject, confining his observations almost exclusively to the Aberdeen water supply. He commenced by stating that the present works were opened by the Queen in 1866, and that by the Act of Parliament empowering the construction of the works the Town Council were empowered to take from the river a maximum daily quantity of six millions of gallons. The population supplied is 90,000. The water, he explained, flows by gravitation to a reservoir and filters rather more than a mile distant from the intake. The reservoirs and filters have a joint available capacity of 13 millions of gallons. From the filters the water is conveyed by gravitation in a brick aqueduct a distance of nineteen miles and a half to the low-service reservoir, which is about two miles from the town. This reservoir, which has a capacity of 6¼ millions of gallons, supplies 98 per cent. of the inhabitants. It is 98 ft. above the part of the city which it supplies. For the supply of the higher districts of the town the water is pumped up by hydraulic power to a reservoir capable of containing 500,000 gallons. This reservoir is 380 ft. above Ordnance datum, and about 250 ft. above the average elevations of the districts supplied. The engines are wrought by the water from the aqueduct, and lift one gallon of water by an expenditure of 2½ gallons. In passing, Mr. Boulton remarked that when the present supply became exhausted a considerable saving could be effected by employing steam instead of water-power, whereby the water used for driving the pumps would be entirely saved. The engine wastes daily 350,000 gallons, or 127,750,000 per annum. Estimating this quantity at prime cost, as supplied by gravitation, and adding the sum to the annual expense of maintaining the engines, the high-service water cost the town three times as much per gallon as that of the low-service, so that the inhabitants supplied with the high-service water were supplied at a great loss to the Corporation, the rate of assessment being the same in both cases. Up to the present date 166,000*l.* have been expended on the works, and the annual expenditure is about 12,000*l.* During the last ten years the consumption of water has increased to a very large extent, and out of all proportion to the population. Previously to the construction of the present works the supply for domestic purposes was only 16 gallons per head per day, the supply, however, not being equal to the requirements of the town; but in 1867, the first year after the new works were opened, it had risen to 24 gallons; in 1871, to 35 gallons; and now in 1877 it is nearly 40 gallons per head per day. Mr. Boulton submitted a table in proof of this, and went on to say that at the present rate of consumption, after allowing 500 000 gallons for flushing sewers, &c., there remained a total of 3,569,060 gallons consumed daily for domestic purposes. Of this

intellectual aspect of our national life. It is a sign of something very unsound in the artistic taste and sentiment of the day that we should be exhorted systematically and on principle to rank the lower and more material forms of art as equal to or even above those which appeal to our highest consciousness and perceptions. It seems a very false economical principle, so far as regards the encouragement of art, that people should be ready to give for an old jar, which may be ornamental, but which may as likely as not be ugly and grotesque in design, as much as would procure them a dozen drawings or etchings representing a far higher intellectual effort applied to a far higher end. But what is most serious is the moral aspect of the subject,—the falsity and pretentiousness of feeling which this artificial taste indicates. What was observed in regard to the art of the theatre is only a type of what we see in society. The acting is so tame and unreal that it hardly deceives any one; but the play is admirably mounted, and the decorations got up regardless of expense. Only unfortunately the decorations themselves are a sham. We need by no means be indifferent to furniture; on the contrary, I would like, if it were possible, to see everything in a dwelling designed with a direct relation to its purpose, its position, the style of its accompaniments, and the special fancy of the inmates. But this is hardly attempted, for this would cost thought, and people wish to be artistic without thought, and at the cost of money only. What is really done is to fix upon a particular fashion of a past generation or of another country, to brand that as artistic, and to purchase as much of it as you can afford. The phenomenon is not new. There have been other periods in the history of our own and other societies when this imitation fashion has prevailed, and they have always been periods of pretence and hollowness, of an indifference to the highest and most serious ends of life. When people are much in earnest they do not care about tricking themselves out in borrowed decorations; it is an amusement for an idle hour; and the corollary to be drawn from the characteristics of the prevalent artistic taste of contemporary society is not a satisfactory one. It was the complaint of Wordsworth, at an early period of this century, that,—

"Plain living and high thinking are no more."

He would hardly have considered that matters were much improved in this respect at present, when Art, which should be the expression of the highest thought and aspiration of a people, is coming to mean a mere arbitrarily chosen form of costly luxury, having no connexion with the serious thoughts and problems of life; when, as it has been remarked, you may break any moral law, but you must admire blue china; when English ladies can so far forget their traditions of true dignity, so far mistake the accidentals for the essentials of refinement, as to masquerade in modern-antique costumes which draw every eye, not, indeed, to the wearer, but to the costume. All this, done in the name of art, is evidence not of true artistic feeling, but of a show and pretence at variance with what is best and noblest in art, which, if it were a reality, should lead us, to quote again the words of Mill, to idealise not only every work we do, "but most of all our own characters and lives." This is hardly to be achieved by dressing out our life in a costume of borrowed finery, and dignifying it by the name of "art."

HOUSE ACCOMMODATION; VENTILATION OF DRAINS; WASTE OF WATER.

In the Health Department of the Aberdeen Social Science Congress the meeting discussed,—"The present State of House Accommodation in Rural Districts—Can its Evils be remedied?"

Dr. Haviland, officer of health, Northamptonshire, said he had 365 towns and villages in his supervision, and it was a painful part of his duty to see the large amount of misery which existed in the labourers' cottages or wretched hovels spread over the thousand square miles of his district. He said that the landlords were to blame for this state of matters, as so long as they obtained their rents they did not seem to care in what state their tenants were placed. In some cases, however, the landlords were unable, owing to pecuniary difficulties, to effect improvements although they were willing, and he suggested that loans should be granted to these impecunious proprietors by Government in the same way as had been done some years ago with regard to the drainage of land, for the purpose of assisting them to build proper houses for their tenants. He said that one of the improvements which was most urgently needed in connexion with labourers' cottages was the abolition of the present system of piggeries, and the granting of licences to those who wished to keep them, in order to ensure the styes being kept in a clean and sanitary condition, which was very far from their present state in most cases.

Principal Brown said that Dr. Haviland's remarks applied exclusively to England, and the circumstances in that country were so very different from those in Scotland that he feared they could not have a discussion of practical value unless some statement was given about the state of matters in Scotland.

Lord Aberdeen said that, with reference to one point in connexion with the subject, there had been a good deal of difference of opinion. This question was as to whether houses for the accommodation of the labouring classes in rural districts should consist of two stories or whether all the rooms should be situated on the ground-floor. He believed it was generally recognised in England that the houses should consist of two stories, and that, at the time when there was a considerable increase of cottage buildings in Scotland under the auspices of the Inland Inclosure Commissioners, the same feeling existed. The opinion which, in his short experience, he would be inclined to form was that there was no intrinsic objection to having all the rooms on the ground-floor, provided there was sufficient accommodation, and for the reason that if it was the custom of any district or county to have upper stories in the cottages, those not accustomed to have an upper story would be apt to use the upper rooms, not for useful purposes of habitation, but merely as store garrets, leading to additional crowding on the ground-floor. Therefore, in the cottages which he had built himself for some years, he had generally adopted the ground-floor plan only, and he was bound to say that he had as yet not seen any definite reason to regret that course. At the same time, however, it would be interesting to hear the opinions of gentlemen of experience who had examined both systems.

Dr. Stevenson Macadam, in reading a paper on this question, stated that the subject was one which in its full bearings concerned architects, medical men, and chemists, as well as proprietors, tenant-farmers, and workmen. It was arranged that this paper should consider the chemical factors on which healthy homes depend. The family house was not only required for protection from weather and accommodation for eating and sleeping, but still more so for air supply, which was at the very root or foundation of all theory and practice as to the remedy for the admittedly defective state of the house accommodation in rural districts. The importance of the air factor might be judged of from the fact that the amount of air inspired daily by an adult man was about a million cubic inches, being more than 500 cubic feet of air, or fully 3,000 gallons. A great part of such air was, in ordinary circumstances, obtained from the outside atmosphere directly during the day, but at night, and especially during sleep, must be obtained from the house. Considering the women and children in average households, the air factor for each member of a family might be taken on an average of 300 cubic feet per day. The quantity of air actually inspired was not, however, the only point to be considered, because changes occurred in the air during respiration which seriously affected the wholesomeness of the respired air, and rendered it unfit for being again breathed in. These changes were mainly in a large increase in the amount of carbonic acid, accompanied [by organic *débris*, principally of a gaseous nature, and the air became thus of a more or less noxious character. This was enhanced by exhalations from the steam and from ill-washed clothing. Practically, the amount of carbonic acid might be taken as an index of the extent of the contamination, though it was not the only, or even the principal, cause of the mischief. In pure or normal air the proportion of carbonic acid was 1 part in 2,500, but in expired air the amount was about 1 in 25, and the air of crowded rooms became charged with the carbonic acid to the extent of 1 to 5 parts in the 1,000. Whenever these latter quantities were arrived at, the air of the room became close and fusty, and was beyond the limit of safety. Indeed, the proportion should not rise above 1 in 1,600, though, for short periods, a larger amount might be breathed. As each member of the population may be said to respire half a cubic foot of carbonic acid per hour, it would follow that such would bring to the specified limit of pollution about 2,500 cubic feet of air, provided that the apartment in which the person was placed was hermetically sealed. In all houses, however, the air was constantly on the move through the chinks in the doors and windows, porousness if the walls, draught in chimneys, &c.; and making allowance for such, the practical amount of air-space in houses might be limited to 800 cubic feet for each adult, or, at the lowest, to 500 cubic feet for each member of the family. Now, granting that an average family consisted of six members, then at least 3,000 cubic feet of house air space should be provided. This can be given in a house the inner capacity of which is 24 ft. long, 16 ft. broad, and 8 ft. high. Taking the length as 30 ft. the air space would be 3,500 cubic feet. No rural cottage for a family should have less than 3,000 cubic ft. of air space or air food. Other factors of importance in healthy houses were connected with water supply and drainage. Granting that the chemical factors are known to and acted upon by proprietors and others, there still remains the necessity of indoctrinating the people themselves with the knowledge that air which has been breathed is more or less hurtful, that fusty smells in houses are evidence of stagnation of air, and, indeed, of starvation in air; that windows are made not only to admit sunlight, but to admit air; and that whatever can tend to circulate air in houses, especially during the evening, as by throwing back the curtains of beds and leaving open the inner or room doors of all sleeping apartments, assists in supplying better and finer air food and in keeping the bodily system in a more thorough state of health.

The President (Mr. Chadwick) said that the question which had been raised by Lord Aberdeen was one of considerable difficulty, and was much affected by local conditions and circumstances as to the nature of the ground on which the cottages were built. In places where the ground was dry and the floors of the rooms and walls made impermeable to damp, it was perfectly safe to have all the rooms on the ground-floor, but in places where these circumstances did not exist, it was desirable that at least the bedrooms should be upstairs. As an illustration of the disinclination of the rural population to live upstairs, however, he mentioned that his father-in-law had erected two-storied cottages on his estate as an experiment, and had found shortly afterwards that the garrets were used as cock-lofts for the accommodation of the poultry. On expressing astonishment at that, the goodwife said that "Jock could not be fashed to go upstairs when he came home from his work at night." He recommended that concrete should be used in the construction of these cottages, as it was cheaper and more comfortable than stone.

The Rev. Dr. M'Leod, of Birkenhead, advocated the passing of a compulsory measure for the purpose of making landlords provide proper cottages for their tenants. He stated that in some districts where he had resided the people were obliged to live in habitations which were totally unfit for human beings to live in. These miserable huts should not be allowed to disfigure the land, and as the power for their removal could only come from Government, he urged that an Act was needed in order to compel landlords to do their duty. It would be unfair, however, to compel landlords to build houses which would not be reasonably remunerative, and therefore he suggested that the rents might be raised, and also the wages of the rural population, so that they could afford to pay higher rents.

Lord Aberdeen said that the paper which had been read by Dr. Macadam showed that the question under consideration was not so simple as it might seem at first sight. It looked very easy to feu a piece of land, and to employ a builder to erect a cottage at a certain figure, but there were in reality many difficulties and disappointments to be met with after the houses had been erected, including damp walls, smoky chimneys, &c. With regard to the former, he believed the evil could be remedied by what was called the "damp course," which consisted of a layer of asphalte or slates built into the wall, a few inches from the surface of the ground, and which prevented the damp from ascending. As to the difficulty of smoky chimneys, his lordship believed that it could often be obviated by putting the grate back a few inches further than

builders were in the habit of doing. With regard to concrete, his own experience was, that it was not so cheap in this district as to make it worth while using that material except where the gravel for the purpose was obtainable near the site of the building, because of the expense of cartage. His lordship said he had tried the system of wooden cottages with very satisfactory results so far as he could judge. The foundations were composed of brick or stone, the floor of asphalte, and the walls of two linings of wood filled in the middle with sawdust. He had been told by the people who resided in these wooden houses that they were warmer and drier than those built of masonry or of concrete. It might be objected that these houses were not sufficiently permanent, but certainly it appeared to him that if they could be built at about two-thirds the ordinary cost, they were worth being tried. In conclusion, the speaker said that it was quite true that landlords were disinclined to incur outlays in building cottages which would not yield a fair remuneration.

Principal Brown suggested that they should go to Parliament in the way of inquiry rather than of asking legislative compulsion on landlords to build houses.

Mr. W. Paul, advocate, entirely disapproved of the suggestion which had been made by Dr. M'Leod, that landlords should be compelled by Act of Parliament to build cottages on their estates, remarking that the proposal was very much like the operation of calling spirits from the vasty deep. If their deliberations were to be worth anything they must be practical, and the suggestion made by the rev. doctor was the very reverse of that.

Dr. Hardwicke moved—

"That this Department is of opinion that the Standing Committee of the Public Health Department should take into consideration what further legislative measures are necessary for the extension and improvement of the cottage accommodation for the rural population, and report to the next annual meeting."

And this was carried.

The Ventilation of Drains and Sewers.

Dr. Stevenson Macadam read a paper on the above subject. He said:—The present system of the disposal of the sewage of houses and towns is open to question in a sanitary as well as an economic point of view, as it undoubtedly leads to the poisoning of our streams, and the contamination of the air in the vicinity thereof. Indeed, there is abundant evidence to demonstrate that the water carriage system, with its attendant foul deposits in badly-laid drains, is productive of much illness and disease in households. At present, however, there is no other process suggested for the disposal of sewage which is less liable to objections for town purposes. Taking matters as they are, certain preventive measures may be adopted to guard against the evils of this mode of the disposal of sewage. These evils are mainly due to the production of sewage gases in the drains and sewers, and to the passage or escape of these gases into our houses. The primary cause of all the mischief is the lodgment of sewage in the drains and sewers, especially at the bends and in the hollows and depressions formed by badly-laid drains or badly-founded drains and sewers, and where the levels are either originally not attended to, or the subjacent earth has sunk or yielded below. Another source of the mischief is where the drains are imperfectly jointed and luted, and sand and earth fall in, tending to choke up the drain more or less, and either forming an elongated cesspool, or even forcing the sewage out of the pipes altogether, and saturating the neighbouring ground, which may be close to or underneath the dwelling-house. The main preventive measure ought to be to look well to the levels and thorough and efficient jointing, which would ensure the rapid and complete fall or run of the sewage from the house to the main drain, and thence to the point of disposal, either on land or in the sea. Part of this work would fall on the individual householder or house proprietor,—so far as the private or service drain is concerned, and the other part on the municipal authorities, so far as the main sewers are concerned. There are many instances in which the private or service drain has been shown to be at fault, and there are no doubt many cases in which the evil may be traced to the putrefaction of foul deposits lying festering and decomposing in the main sewers. Fresh sewage is comparatively sweet and harmless, and were it to have free passage onwards, it would keep fresh till it escaped from our towns, owing partly to putrefaction not having set in, and to the aëration and oxydation due to the oxygen dissolved in the body of water accompanying the sewage, and which would at the moment of liberation tend to oxidise or consume the escaping gases, and thus render them innocuous. The chemical nature of the sewage gases is generally misunderstood. It is commonly said that hydrosulphuric acid (sulphuretted hydrogen) and carbonic acid, which are readily recognisable in the emanations from decomposing organic matter, are the types of the noxious sewage gases. No doubt these gases named are destructive to life when in quantity, but I am inclined to the belief that the more noxious of the sewage gases are evolved at an earlier stage in the putrefaction of the organic matters, whilst the sulphuretted hydrogen and carbonic acid are produced at a later stage in the decomposition. In fact, I believe that the main danger lies in the earlier stages, when gases and vapours of a true organic and combustible nature are produced. In the investigations into the nature of the gases evolved from deposits in drains and sewers, which I carried out at the time of the Water of Leith drainage scheme, and which were embodied in one of the blue-books of the Sewage Commissioners, it was a rare thing to find sulphuretted hydrogen in the escaping gases, and the bulk of the sewage gases were found to burn readily, showing their carbo-hydrogen character. Moreover, any one who has inhaled sewage gas, either in our large sewers or when a drain is opened, knows that hydro-sulphuric acid (sulphuretted hydrogen) is seldom present; but, nevertheless, the gases exert a most debilitating effect upon the general health and spirits. In the majority of cases, and, in fact, with few exceptions, it may be said that generally no precautions are taken in the construction of house drains and their attachment to the main drains to prevent sewage-gas from falling back into our our houses. The water-closets have generally a direct connexion with the drains and sewers, and not only so, but the waste-pipes from the cisterns have in most instances a passage to the sewers either indirectly through the pan or bend of the closet or directly to the drains themselves. Taking the case of ordinary house service and connexion with drains as ordinarily practised, there is simply a bend put on the direct pipe laid to the main drain. The only security in such an arrangement lies in the water in the bend lying there in sufficient quantities, and not being forced by the pressure of gases in the main drain, or being emptied by the suction of the descending water, especially if there be two or more branch pipes discharging into the same house-drain. To remedy this evil it has been suggested, and is occasionally carried out into practice, that a ventilating tube is inserted in the service-drain. This single ventilation is a decided improvement, but taken by itself is not sufficient. Between the ventilating pipe and the sink or closet bend there should be placed in the service-drain a U-shaped trap, with upright drain-pipe leading to the surface, and in the throat of which there is inserted a wire cage containing fragments of dry charcoal. These upright pipes may rise above the surface when in open ground, or may be covered with a perforated iron plate when in outside passages or pavements. A still further improvement, where an open space or garden ground is at command, is to open up the drain for 1 ft., or so on the house side of the U-shaped trap. In all cases there should be a ventilating shaft or pipe carried from the bend of the closet or sink pipe to the roof of the house. This ventilating shaft or pipe may be a continuation of the service-drain. For the public ventilation of the street drains and sewers, the furnaces of public works, such as gasworks, should be utilised, where such are available, and open air-shafts should be carried from the main drains to the surface of the streets at numerous points. If the main drains are in good order, there need be no escape of noxious gases; but where deposits of foul matter are lying in the drains, charcoal cages may be used, though the true remedy would be the cleansing out and repair of the defectively-constructed main drain. Besides the ventilation proper of the main drains, there should be the periodic flushing of all main drains and sewers by the opening of sluices or valves connected with large cisterns placed at proper distances apart. A sudden rush or escape of a large volume of water down a sewer at a given time would float on all the solid *débris* lying in the bed of the sewer, and thus remove the cause of the production of the sewage gases. In regard to cisterns, the position of such is often objectionable, being placed over the water-closet, and the exhalations arising therefrom are absorbed by the water, which thus becomes tainted. Great mischief arises from the carrying of the waste-pipe directly or indirectly to the drains, and from the ventilation of the service-box into the cistern. Both the waste-pipe and the escape-pipe from the service-box should be carried to the open air.

Mr. Chadwick described a sewer as the bulb of a retort charged with decomposing matter, the neck of the retort being the drain carrying the products into the house, bringing disease into the premises, and strongly advocated the construction of entirely new sewers.

Mr. H. H. Collins, in the course of some interesting remarks, maintained that the proper system to adopt with regard to sewage was to separate the house entirely from the drains; and to have a separate cistern for water-closets. By a series of diagrams on the blackboard he explained his ideas, and his remarks were very cordially received.

Mr. Boulton, city surveyor, quite agreed with the remarks of Mr. Collins as to the construction of sewers. There was no doubt that many of their sewers were badly constructed both as regards size and level. In a flat running sewer where there was not a sufficient body of water the sediment deposited created sewer gas, which went generally to the highest point. He was, therefore, strongly in favour of the ventilation of sewers; and he had made up his mind that, in the proper laying of sewers, the first thing to be done was to cut off the house-drain from the sewer altogether.

Waste of Water in Towns.

Mr. Wm. Boulton, C.E., Aberdeen, read a paper on the above subject, confining his observations almost exclusively to the Aberdeen water supply. He commenced by stating that the present works were opened by the Queen in 1866, and that by the Act of Parliament empowering the construction of the works the Town Council were empowered to take from the river a maximum daily quantity of six millions of gallons. The population supplied is 90,000. The water, he explained, flows by gravitation to a reservoir and filters rather more than a mile distant from the intake. The reservoirs and filters have a joint available capacity of 13 millions of gallons. From the filters the water is conveyed by gravitation in a brick aqueduct a distance of nineteen miles and a half to the low-service reservoir, which is about two miles from the town. This reservoir, which has a capacity of 6½ millions of gallons, supplies 98 per cent. of the inhabitants. It is 98 ft. above the part of the city which it supplies. For the supply of the higher districts of the town the water is pumped up by hydraulic power to a reservoir capable of containing 500,000 gallons. This reservoir is 380 ft. above Ordnance datum, and about 250 ft. above the average elevations of the districts supplied. The engines are wrought by the water from the aqueduct, and lift one gallon of water by an expenditure of 2½ gallons. In passing, Mr. Boulton remarked that when the present supply became exhausted a considerable saving could be effected by employing steam instead of water-power, whereby the water used for driving the pumps would be entirely saved. The engine wastes daily 350,000 gallons, or 127,750,000 per annum. Estimating this quantity at prime cost, as supplied by gravitation, and adding the sum to the annual expense of maintaining the engines, the high-service water cost the town three times as much per gallon as that of the low-service, so that the inhabitants supplied with the high-service water were supplied at a great loss to the Corporation, the rate of assessment being the same in both cases. Up to the present date 166,000l. have been expended on the works, and the annual expenditure is about 12,000l. During the last ten years the consumption of water has increased to a very large extent, and out of all proportion to the population. Previously to the construction of the present works the supply for domestic purposes was only 16 gallons per head per day, the supply, however, not being equal to the requirements of the town; but in 1867, the first year after the new works were opened, it had risen to 24 gallons; in 1871, to 35 gallons; and now in 1877 it is nearly 40 gallons per head per day. Mr. Boulton submitted a table in proof of this, and went on to say that at the present rate of consumption, after allowing 500 000 gallons for flushing sewers, &c., there remained a total of 3,569,060 gallons consumed daily for domestic purposes. Of this

quan y at least one-half was wasted. Taking the total daily consumption within the city, which was 4,069,060 gallons, and adding 350,000 gallons wasted by the hydraulic engine, and 6,000 gallons supplied to various parties along the course of the aqueduct, there was a total daily consumption of nearly 4,500,000 gallons, or three-fourths of the whole supply authorised by Act of Parliament. The causes of the great increase in the consumption was mainly due to the introduction of water into the poorer classes of houses, and the fitting-up of water-closets, baths, &c. These and other sanitary arrangements had been going on for ten years past. With the extension of a better class of houses into the country, an increased consumption of water must be expected, over and above what is due to the increase of the population. If the consumption went on annually increasing at the average rate during the past four years, in twelve years the limit of supply will be reached. Mr. Boulton went on to point out that, in addition to the natural increase in the consumption arising from increased population, &c., there was a great waste of water by its lavish use for ordinary purposes, which he did not find fault with if these were of a sanitary nature. The waste he complained of was caused by persons allowing taps and water-closets to run during the night and all hours of the day. There was great difficulty in checking this waste, amongst other things, on account of the notion that the supply of water was inexhaustible, and that it improved the sanitary condition of the drains, which was a great mistake. But perhaps the greatest cause was defective services and fittings, such as service-pipes, taps, water-closets, &c. Mr. Boulton went on to show that the greatest consumption of water was at mid-day, and the smallest between the hours of one and five in the morning, the greatest being at the rate of 2·30 gallons, and the lowest 1·32 gallons per head per hour. The greater part of this was attributable to waste. As to the mode of preventing the waste, he showed that much could be done to detect and prevent waste by the adoption of a meter invented by Mr. Deacon, of Liverpool. The only method hitherto adopted in Aberdeen for checking waste was house-to-house visitation; and where the inspector went about his work in a proper manner good service was done. Mr. Boulton went on to point out that in all the more important towns there was a material change in regard to sewerage and water supply, but although these works had been constructed at the cost of the people themselves, and ought to be cared for by them, they forgot that waste of water and improper use of sanitary appliances often so thoughtlessly practised meant more taxation. With all our education there was a great want of training in the use of sanitary appliances, and he urged that this was a proper question to be taken up by the school boards. There is also, concluded Mr. Boulton, unfortunately a sort of antagonism existing between a large mass of the community and the authorities on such matters. A feeling exists in the minds of many that they are harshly treated when the conservators of the public interest put the law in force, which has been framed with the consent of all parties for their individual welfare as well as for that of the general community; and I am of opinion that if the corporations of our various towns, instead of employing inspectors, who are looked upon more as inquisitors or spies than as benefactors, would employ men with something in them akin to the missionary spirit, to instruct people in the use of sanitary appliances, pointing out to them the saving that would be effected in taxation by aiding the authorities in checking the waste of water, and abstaining from acts calculated to injure or interfere with the working of sanitary appliances, much might be done in this way by kindly explanations of what practices ought to be avoided, and what other things ought to be done and how to do them, in order to conserve public property of the nature under consideration; and thus a desire for co-operation and a feeling of mutual respect and regard would be engendered between the people and the authorities, and the social and moral status of the people elevated, which, I take it, is the aim and object of all social science.

Mr. Joseph Brown, Q.C., having elicited from the President, Mr. Chadwick, that he entirely disapproved of cisterns in cities, went on to say that it must be obvious to every one that if they had a cistern that would contain 100 to 150 gallons of water, and filled it, if the water was ever so foul if they let it stand it would precipitate its sediment to the bottom, and the water from the upper part could be used without any injurious consequences. He condemned as preposterous the method of drawing off water from the bottom; and maintained that the way to get pure water from the cistern was to have the pipe say 4 in. or 6 in. from the bottom. He expressed the opinion that there was not one poor man in 100 who ever cleaned out his cistern at all; and strongly denounced the system by which in the houses of the rich as well as of the poor the cisterns were placed by those "blockheads," the builders, in situations where they could not conveniently get at them to clean them out. His inclination, however, would be to retain the use of cisterns, but to have them cleaned out frequently, and to have the discharge-pipe several inches from the bottom. With reference to pipes for conveying the water, he did not see why iron should not be used instead of lead.

Mr. Boulton said that in Aberdeen they had three systems of water supply. Some persons got all their water from cisterns; others had cisterns for their water-closets, and drew their supply for culinary purposes direct from the mains; and others again took all their water direct from the pipes. In all well-regulated towns now rules were enforced by which cisterns must be placed where they could be easily seen and inspected.

Mr. Baldwin Latham defended the engineers from the charge that they were to blame with regard to matters of water. The view of the engineer, with reference to impure water, would be that the sediment in it would be better in the cistern than in the stomach of the consumer. Speaking of the waste of water in Croydon, where the consumption was at one time as high as 116 gallons per head per day, he showed that the waste arose from the taps being left outside the houses, and that whenever these taps were placed inside the houses, where water running to waste would be a nuisance, the consumption was reduced to fourteen gallons per head per day. As to cisterns, he did not think their use detrimental, except when in connexion with water-closets, &c. As to the use of iron pipes for conveying the water, they were too easily corroded, and if they were to have pure water they must have something more durable. The best substitute, but an expensive one, was lead pipes lined with tin.

Mr. Jamieson, lecturer on chemistry, Aberdeen, speaking with reference to the deposit of organic matter in cisterns, said that to a great extent the whole question resolved itself into a matter of cistern or no cistern. Since Mr. Boulton had shown that they had at command in Aberdeen a continuous supply of water, it would seem that there was no use for cisterns. Although a few careful people would clean them periodically, the great mass could not be expected to do so. One speaker had referred to the advantage of allowing the suspended matter to deposit in the cisterns, and thus render the water supply purer; but that was to forget that the contamination complained of by Dr. Macadam was due more to the action going on in the cistern and the development of vegetable germs conveyed in the supply than to the nature of the impurities in the original supply.

THE NEW INFIRMARY BUILDINGS, CASUAL WARDS, AND WATER TOWER, AT LAMBETH.

The new infirmary buildings at Lambeth which have been in course of erection during the past two years, on a large plot of land immediately adjoining the new workhouse, between Kennington-road and Kennington Park-road, are now fast approaching completion, and will be ready for the reception of patients in about a month. The buildings, and the grounds in connexion with them, cover an area of more than three acres in extent, and have an extreme length of 650 ft. The site is angular in form, the depth of the central portion, from front to back, being 280 ft. The buildings consist of six blocks, four of which contain the patients' wards,—two for males, and two for females,—with accommodation for 650 inmates, in addition to separate wards for patients suffering under special diseases. The several blocks contain three lofty stories each, in addition to the basement, and attached to those for the patients are three spacious airing and recreation grounds. The administrative block is in the central portion of the site, the front part consisting of the head surgeon's residence, the other portions of the block containing the under-medical officers' apartments, and the house-steward's and matron's rooms, together with the surgery, dispensary, and other rooms and offices, whilst the culinary department, including kitchens and other apartments in connexion, are at the extreme rear of the block. The principal entrance to the other portions of the building, including the male and female wards, is in the centre of the administrative block, and leads, right and left, to corridors 8 ft. in width and 450 ft. in length, from which the several wards are approached. The whole of the patients' wards are heated by Galton's stoves, in conjunction with hot-water pipes, carried round the walls of the several wards. The whole of the cooking is by gas, and in immediate connexion with the kitchens there are three lifts, one in the centre and the others at each end of the corridors, by which food is conveyed from the basement to all the upper portions of the building. There are also similar lifts for the conveyance of patients to and from the various wards on the upper floors. Each floor is well supplied with baths and lavatories, and at one end of all the wards there are nurses' kitchens and sculleries, commanding a view at one glance of the entire ward. The engine-house, boiler-house, and laundry buildings form a separate block at the extreme back of the premises, and contain an engine of eight-horse power, together with washing, wringing, mangling, and other machines in connexion with the laundry department. On one side of the entrance-gates there is a neat and ornamental porter's lodge, and on the opposite side a mortuary and dead-house.

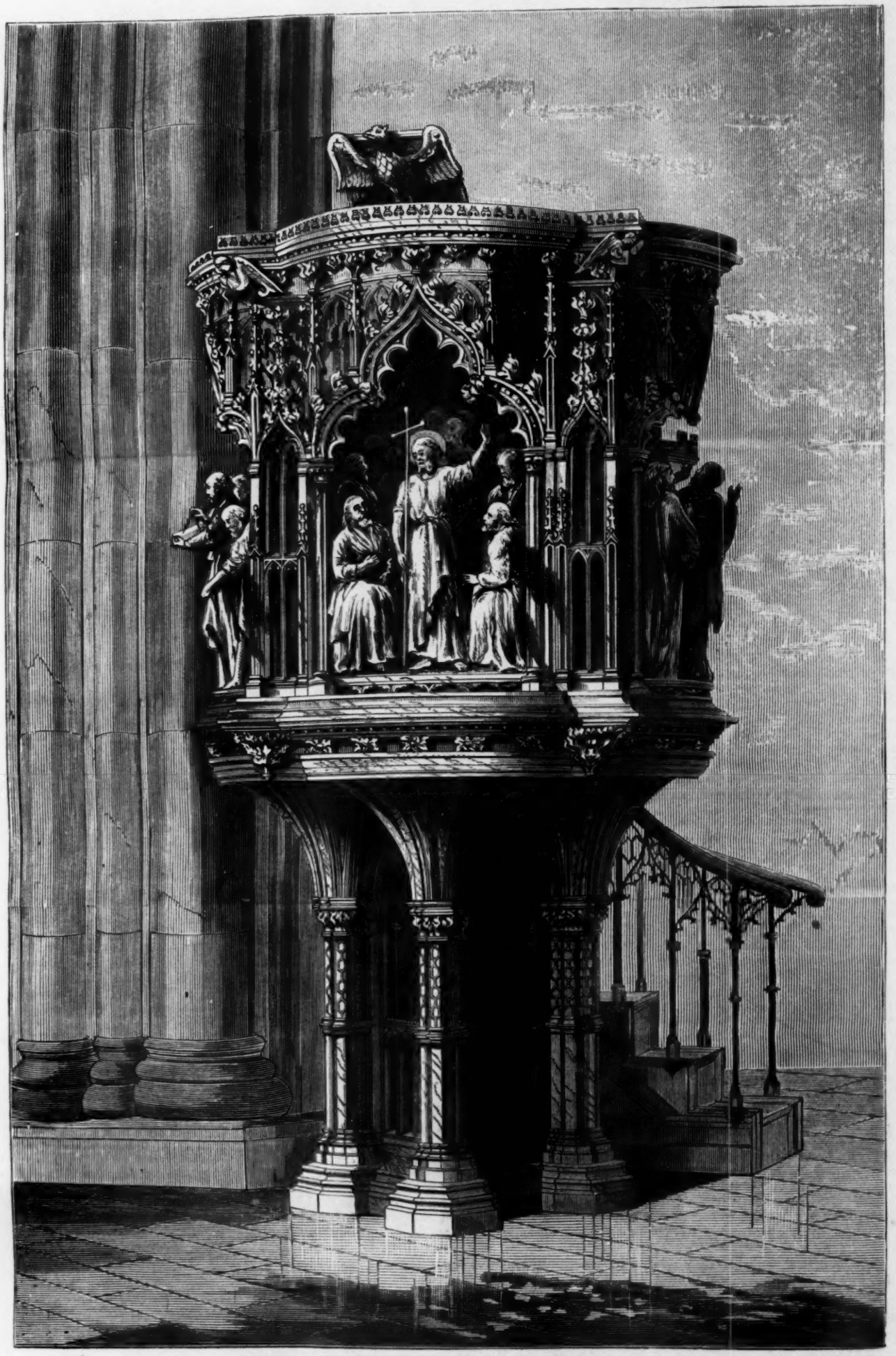
On the extreme west side of the infirmary buildings new casual wards are in course of erection, on a much-improved principle. They consist of a range of buildings two stories in height, having accommodation for seventy-eight casuals, male and female. The building is being erected on the separate system. On the ground floor there are wards for forty male casuals, divided from each other by partition-walls, and in front of each are the labour cells, where the casuals will be required to do certain work,—chiefly stone-breaking,—before leaving their wards. The female wards, thirty-eight in number, are on the upper floor. At the west end of the wards there is an administrative block, containing the residence of the superintendent and other officers of the wards. This department will also be fitted with baths, a disinfecting apparatus, and other sanitary appliances, one of the intended regulations being that each casual shall have a bath before going to his or her ward.

In addition to the above-named buildings, a lofty water-tower is also in course of erection at the south-east side of the new workhouse, which is intended to supply both that establishment and the infirmary. The dimensions of the tower at the base are 28 ft. by 20 ft., and it is carried up in seven stages to a height of a little more than 100 ft. At each angle there are strong buttresses, all the dressings and window-heads being in Portland stone, and the rest of the structure in stock and red brick, uniform with the workhouse and infirmary adjoining. At the top of the tower there is a cast-iron tank, which will contain 21,000 gallons of water, surmounted by a wrought-iron gabled roof, covered with red tiles. There is a stone staircase from the ground to the upper part of the tower, and the rooms on the different floors, seven in number, will be used for stores.

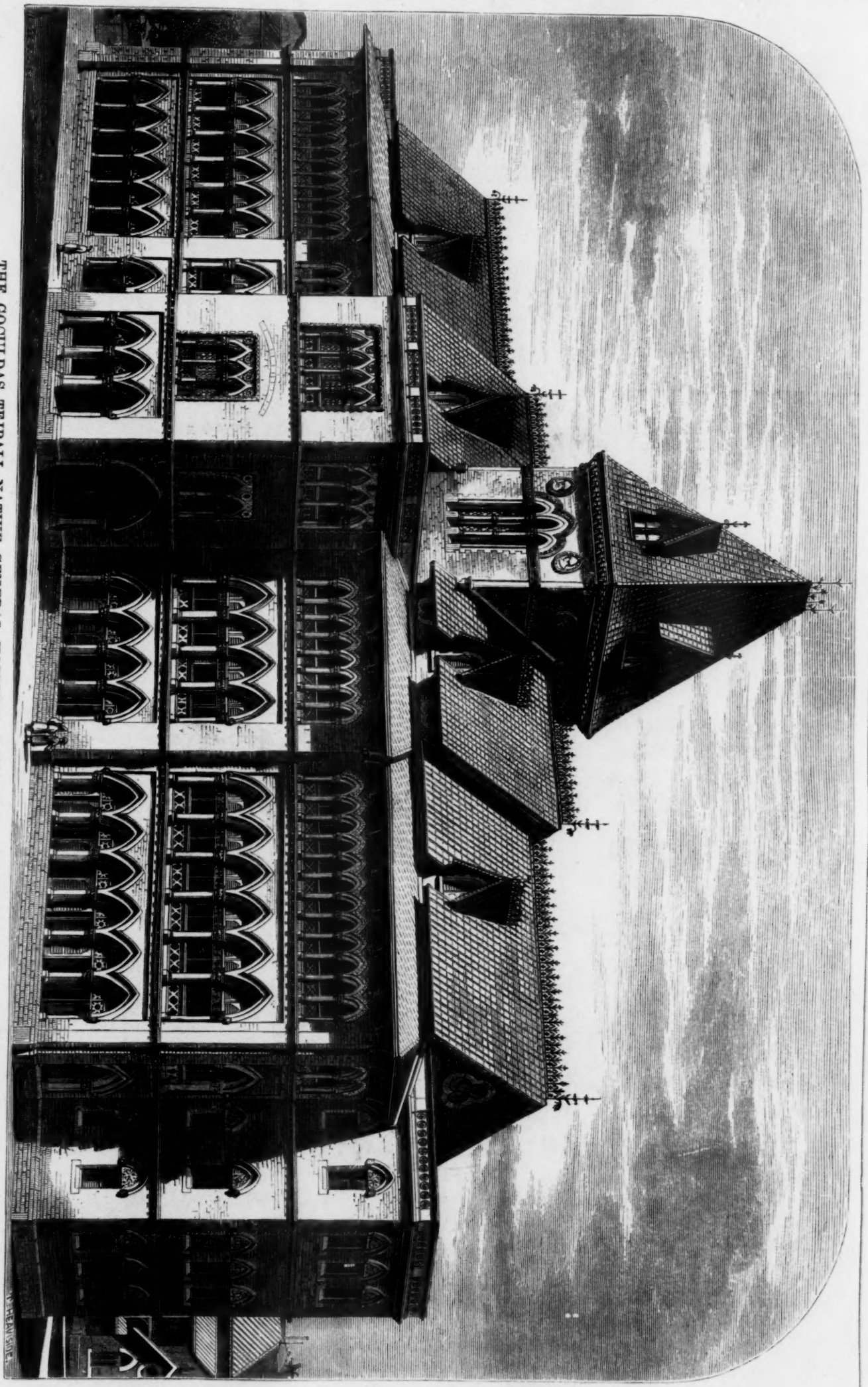
Messrs. Fowler & Hill are the architects for the whole of the buildings, the contractor for the infirmary and the casual wards being Mr. James Taylor, and for the water-tower Messrs. Crockett. Mr. W. Gooding has acted as clerk of works during the progress of the several buildings, the entire cost of which, including the water-tower, is estimated at upwards of 65,000*l*.

PULPIT, CHESTER CATHEDRAL.

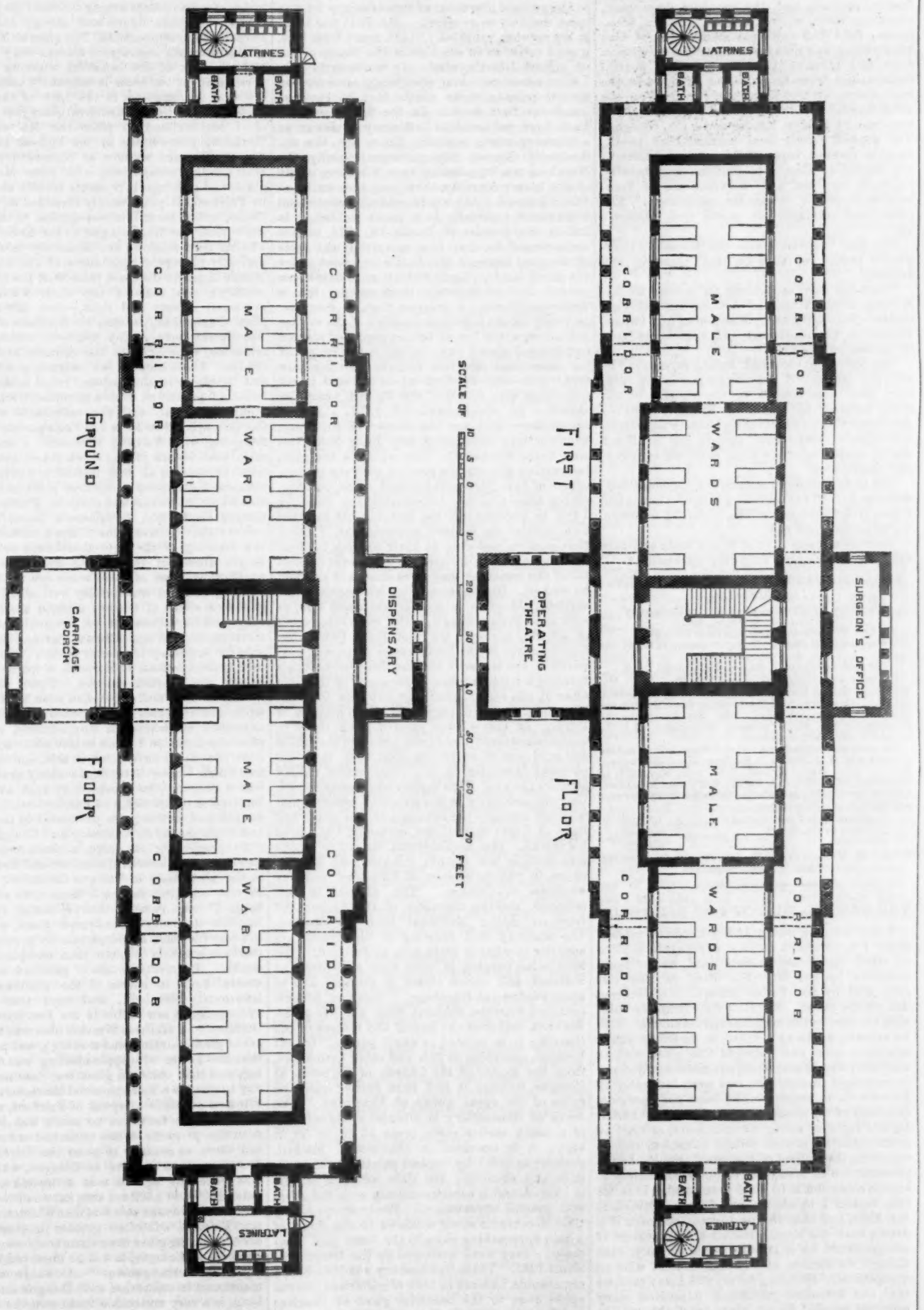
We add to the illustrations already given in our pages of the new works in Chester Cathedral a view of the pulpit. It is composed of oak; the panels represent St. John preaching in the Wilderness, the Vision of St. John, and the building of Solomon's Temple. It is the handsome gift of the Freemasons, and was executed by Messrs. Farmer & Brindley, from the design of Sir Gilbert Scott, R.A.



PULPIT, CHESTER CATHEDRAL.—Sir G. G. Scott, R.A., Architect.



THE GOCULDAS TEJPALL NATIVE GENERAL HOSPITAL, BOMBAY.—Designed by Col. J. A. Fuller, R.E.



THE GOCULDAS TEJPALL NATIVE GENERAL HOSPITAL, BOMBAY.—*Plans.*

THE GOCULDAS TEJPALL NATIVE GENERAL HOSPITAL, BOMBAY.

This building is erected at the northern part of the esplanade facing the south-east. The design is by Colonel J. A. Fuller, R.E.; the style is Early English Gothic. It affords accommodation for eighty-eight male and forty-four female patients, and the requisite dispensary, operating room, matron's room, surgery, bath-rooms, &c. The principal staircase is of blue basalt stone, and obtains its light and ventilation from two three-light windows in the central feature, and from four dormer windows in the roof above, as also from the corridors on the three floors. The two servants' staircases are of cast-iron, by Messrs. Macfarlane & Co., Glasgow. The general facing is of coursed blue basalt, roughly dressed, bases of blue basalt, columns and arches of Coorla (a buff-coloured basalt). Capitals, cornices, and parapets are of Porebunder stone (a calcareous sandstone). The rooms and corridors are paved with Minton's tiles.

The roof is covered with the Broomhall Company's patent red tiles on teak planking and framing.

There are four medallions in marble by Mr. Kipling, of the School of Arts, of the following castes—Bhatia, Purbhoo, Mussulman, and Parsee, erected on the south-east and south-west faces of the central feature.

The following detached buildings, covered in with the Broomhall Company's patent red tiles, have also been erected in the vicinity of the main building at a cost of 72,016 rupees:—Apothecary's and assistant apothecary's quarters, consisting of two floors; cholera and small-pox wards, consisting of one floor; servants' quarters; and dead-house.

The main building contains 702,038 cubic feet, and cost 2,95,074 rupees, at a rate of 6 annas and 9 pies (10½d.) per cubic foot, including drainage, water supply, and gas.

There is a marble tablet in the main staircase vestibule, bearing the following inscription:—

THE GOCULDAS TEJPALL NATIVE GENERAL HOSPITAL.

The Main Building was erected from Designs by
Lieut.-Col. J. A. Fuller, R.E.,
And the Detached Buildings from Designs by
Nusserwanjee Darajee Mirja, Overseer, P.W.D.,
And sanctioned by
The Government of India, on the 1st April, 1870.

The work was commenced on the 10th May, 1870; His Excellency the Rt. Honble. Sir Seymour Vesey Fitzgerald, G.C.S.I., Governor, and President in Council, and was completed on the 8th April, 1874, His Excellency the Honourable Sir Philip Edward Wodehouse, K.C.B., Governor, President in Council.

The work was carried out under the immediate orders of Lieut.-Col. J. A. Fuller, R.E., from May, 1870, to May, 1871; J. H. E. Hart, M. Inst. C.E., from May, 1871, to November, 1872; Col. J. A. Fuller, R.E., from November, 1872, to April, 1874; Muncherjee Cowasjee Muryban being Assistant-Engineer in charge.

Goculdas Tejpall contributed	Rs. 1,50,000
Estimate as sanctioned	3,67,494
Actual cost	3,67,465

Colonel M. K. Kennedy, R.E., Secretary to Government, Public Works Department.

THE STAINED WINDOWS OF FAIRFORD.*

I should only weary the patience of readers were I to attempt to say over again a tithe of what has been so well said as to these windows by the late Mr. Holt on the one side, and by Mr. Fuller Russell, Mr. Jackson, &c., on the other. Mr. Holt did extremely valuable service, by the very marked manner in which he actually spoke and wrote, in directing public attention, nine years ago, to this glass, and its extreme value, in protesting against misjudged and incompetent restorations, and even indirectly by his own warm-hearted enthusiasm and energetic advocacy of the claims of Albert Dürer. Whether he was right or wrong on this point, at least he contributed to arouse public attention, and in regard to the revival of Mediæval art, and to the preservation of Mediæval monuments, merely to arouse attention is to do a great deal. It is for this reason I think we are deeply indebted to Mr. Holt, and that on the present occasion it is fitting that we should record the expression of our gratitude as a tribute to his memory, even though we cannot add our agreement with all his opinions. Speaking for myself, I may premise that the lamented gentleman expressed many opinions which I do not share, and this will be evident to any one who chooses to compare the course of his argument with my own. At the same time, and admitting that Mr. Holt made many mistakes, I do not think that, on the general question as to Dürer's having had a share in the designs, he was a fully competent judge. We all know how far bias is capable of deceiving us all, and Mr. Holt formed no exception to the general rule; but it does seem to me that, in the first place, familiar as he undoubtedly was with the works of his favourite master, as to the general character of these designs he was most unlikely to go wrong. Mr. Holt was then, in my opinion, previously to and apart from bias, a good critic as to what bears the stamp or not of Albert Dürer's mind. In addition to this, I have never seen him completely answered on several points; these points may be summed up under four heads. In the first place, we know from independent testimony of Dürer as a glass painter; secondly, there are the undoubtedly German characteristics; thirdly, the Nürnberg marks, pointing to a Nürnberg origin of the glass; fourthly, there are the marks of Dürer himself. Already in various articles and letters, and especially in a paper published in full in the *Builder* of March 18, 1876, I have endeavoured to show how completely the facts of the case bear out Mr. Holt's argument under the above heads. I will endeavour to break new ground, and to import a little novelty into a well-worn theme. I propose, then, to compare, as briefly as the interesting nature of the matter will allow, some few of the examples of stained and painted glass I have visited in the course of my researches into this question—to compare these with the Fairford windows; and I will commence with a few of the English examples visited. In the autumn of 1876, I visited Shrewsbury, and saw the Church of St. Mary, which is very interesting, and dates from Norman times downward. The windows are most interesting, though the greater part are modern copies of the Düreresque school, some, perhaps, rather close copies. Considering the difficulty I felt in hunting out the genuine old material from amidst its modern surroundings, I think that modern restorers, in their anxiety to clean and renew ancient designs, are not always as careful of the treasures they have charge of as could be wished. Besides some Flemish panels in the sacristy, old glass is seen on the north side, as well as in Trinity chapel. The most interesting of all are, perhaps, the fine Jesse (which has been restored in the lower range of panels, and partly in the tracery), and the three lancet lights forming a triple window to the north of the high altar of the choir, containing subjects from the life of St. Bernard, attributed to the designs of Dürer. In this window painted glass tends to supersede stained, and hence, although the rubies and gold are of extremely good tone, it is the pictorial character of the glass which chiefly attracts the eye. The style and accessories are German, and early in the sixteenth century, and whether actually the outcome of the mind and hand of Dürer himself, are certainly, I think, of his school. The architectural character of the ornament is late Gothic, mingled with Renaissance, in the style seen at Nürnberg, and five windows in Cologne. The nimbus is still retained, and the character of the figures and faces is rather Mediæval than Renaissance. The anatomy and drawing of the figures are superior to what is often seen at Fairford. The interlacing cusping is later than this detail at Fairford, and comes closer to Cologne and to some windows at Nürnberg. This fine window contains fourteen subjects from the life of St. Bernard, reckoned the last of the fathers of the Church; it is painted in small panels. It was brought, according to this and other authorities, from the vaults of the Church of St. Sevin at Cologne, whither it had been carried from the ruins of the great Abbey of Altenberg. The Jesse at Shrewsbury is likewise a fine window of a much earlier style, some 25 ft. or 30 ft. high; it is executed in the mosaic method, assisted as usual by enamel painting in the outlines and shadows; the date assigned to this is 1352–3, and it accords entirely with the style and general appearance. Tewkesbury Abbey Church contains seven windows in the choir, of a date approaching close to the Jesse just mentioned; they were bestowed by the Despencers about 1349. These Tewkesbury windows bear a remarkable likeness in tone of colour and general appearance to the beautiful glass at Chartres and Rouen, especially that seen in the Cathedral of Chartres and the Church of St. Ouen. The east window of Gloucester Cathedral is a fine one of the latter half of the fourteenth century, and contains some rich ruby and other colours. The decorated canopies, from the straight lines in which they are enclosed, have the look of having been made to order, and were from their appearance executed like most English Mediæval glass from the designs of foreign artists. This window, praised highly by Winston, is in my humble opinion not equal to the Tewkesbury or Malvern windows. The east window of the lady-chapel contains glass of several periods, and remains of a rod of Jesse among the rest: the greater portion comprise figure and canopy subject of Perpendicular appearance. The glass at Malvern, of the fifteenth century, I esteem very highly, and the look of the beautiful windows of the north side of the choir is extremely pleasing to the eye, so excellent is the tone of the white glass. Of the purely Mediæval glass just spoken of, I am inclined to place the Malvern and Tewkesbury examples in the highest position. The St. Bernard window at Shrewsbury is too late for fair comparison with pure Mediæval glass, and although it presents certain analogies to Fairford, is yet properly classified as Cinque Cento, which term Winston applies to the transition from the Middle Ages to the Renaissance. The Malvern windows are especially valuable as perfectly-preserved specimens of the art of the Middle Ages at different periods of the fifteenth century; the tone of the choir windows is extremely silvery and light,—just the sort of glass, I should say, to suit our Northern climate. The Tewkesbury Abbey windows exhibit rich colouring, especially in the crimson and green shades. The canopies, so extremely effective and beautiful in themselves, recall to mind the forest of pinnacles, such a prominent feature of Milan Cathedral, and the tabernacle-work of German art. Now for a brief comparison of the foregoing with Fairford windows. I may premise that before jotting down the opinion I am now expressing I had visited a fairly large number of examples of coloured glass in English cathedrals, churches, and chapels. Putting aside Cinque Cento and Renaissance glass, I must confess that I have come to the conclusion that the drawing of the figures, although defective, is yet ahead of that found elsewhere. The peculiar features of later work are in the windows at Fairford wonderfully well allied to the gem-like effect of ancient stained glass. The ruby, and its various shades, the gold stains, the ultramarine, and sometimes the green are noticeable for brilliancy or beauty of tint. The enamel used is darker than at Malvern, a warm reddish brown, as Winston notices. There is more variety of face and expression than at Malvern; while the canopies and accessories differ from any seen elsewhere in this country, and the general conclusion I came to last autumn accords with the one I have come to this, and it is one, too, which I have little doubt many are on the whole prepared to accept, viz., that as far as England is concerned, the Fairford windows are *unique*, and can only be paralleled in Germany, and in particular at Nürnberg and Cologne.

In proceeding to make a short comparison between these beautiful windows and five others in the north aisle of Cologne Cathedral, as well as with windows in the ancient town of Nürnberg, I may remark that Winston, the best English authority on coloured glass, prepares the way for such a comparison by grouping the windows together in more than one place in his works. He mentions the "panelled arrangements" seen in seven of the windows in St. Lawrence, Nürnberg, and says that similar arrangements are visible in the five windows at Cologne. In all these Winston observes that the art of glass-painting was making great progress, that the power of stipple-shading was developing, and that coloured glass was tending every day to assume a more pictorial character. Next Winston proceeds to speak of Fairford, and it is a remarkable fact that so much was he taken with the progress of the technical execution he saw there, as actually to place the Fairford windows later than the five at Cologne, which it is now generally agreed was a mistake, as the dates 1508 and 1509 are seen in two of the latter. Besides the remarkable fact that Winston thought that Fairford exhibited greater progress in the art of painting glass than those truly magnificent windows at Cologne, it will be observed that the "panelled arrangement" of subjects above mentioned in connexion with Cologne and Nürnberg, is a very noticeable feature in the Fairford windows. It is not merely visible in the figure and canopy series (wherein you see an Old or New Testament personage, or a saint or persecutor of the Church); but also in the picture-windows, where it may be observed,—as for instance in windows I., II., III., IV., VII., VIII.,

* From a paper by Mr. J. Powell.

and IX.,—that there are elegant banded pillars on either side supporting rather heavy canopies overhead, and that the various figures and details of the subjects, painted in the windows, appear in the open panels left by the architectural work. Now it is a most important circumstance, and one having a special value in reference to the origin of the glass, that not only have we here the same panelled arrangement as at Nürnberg and Cologne, but that the character of the architecture of the panels under which the figures appear is similar in all three examples. That character is wholly foreign to what is seen in English architecture of the end of the fifteenth century; it may best be described as a Florid Gothic, with which many Romanesque details combine. These Romanesque details are the round arches, the squared abacus, and the heavy appearance of the whole canopy. Some features, such as the elegant little shafts supporting a widely spreading head, remind one of Indian architecture, and the Garden of Olives, and the spires of the gorgeous temple in another window are also of Eastern character. Now, this Eastern character was a feature of German architecture in the middle ages, and may be found to this day not only in the interior of houses at Nürnberg, but in the cities along the Rhine and elsewhere in Germany. . . . .

The similarity which actually exists between Nürnberg and Fairford is so close that I cannot imagine any candid mind refusing to acknowledge it for a fact, so soon as it is fairly set forth in its true light. I take one window as a sample of several in the Church of St. Sebald; of all the most characteristic in reference to the Fairford Crucifixion. Although this window in St. Sebald is probably older than these with which I am comparing it, yet as we have no record of the exact date of either,—nothing but the general character and the details to judge from,—no certain inference as to the respective dates can be drawn. Four panels of the window are occupied with the Crucifixion, which bears a remarkable resemblance to the same subject here. In the first place, as in Dürer's Crucifixion at Bâsle, an angel is introduced over the cross of the Penitent Thief and receives his soul, represented by a small white body, while a demon receives the soul of the Impenitent, represented by a dark body. Secondly, there is another point specially emphasised by Mr. Holt in 1868,—and found in the Bâsle Crucifixion, if I mistake not,—and it is one not commonly seen; Christ our Lord is crucified with nails on a cross of sawn timber, whereas the thieves are bound with ropes to rude logs of unsawn wood,—thus to mark more emphatically their subordination to the central figure of the picture. The Blessed Virgin is supported in the arms of St. John and attended by the holy women present; and Magdalen embraces the cross with energy and fervour. These points are varied a little at Fairford, though the same idea reigns supreme; but they are found, not only in the famous Brussels Crucifixion, of which so much was made in the endeavour to crush poor Mr. Holt, but also in a small painting on panel, formerly in the possession of Lord Northwick, now belonging to Mr. Baillie, and as to the authorship of which there is no doubt, for besides the name of Dürer upon the frame, I have found its *fac-simile* among the works of the master, not only in general outlines, but also in the dog,—reproduction of one in St. Hubert, — and the executioner on the ladder, which is the reproduction of the same figure at Bâsle. Among other points of analogy between this picture and Fairford is that of representing the Virgin as in the act of fainting. Many more remarkable points of analogy between this window and the east window at Fairford might be added, but perhaps we have said enough to show that a very close similarity in composition and in detail does actually exist, so much so that there can be little doubt that, unless it be assumed that the designer of the two was the same person,—which as yet I have not done,—that the artist of the Crucifixion at Fairford must have been familiar with this window at Nürnberg, or with a design of exactly similar character. In taking leave of this window, I may add, for the sake of those who choose to pursue the question further, that it is briefly mentioned in a former paper, written for the Archæological Institute, and published in the *Builder*, as window IV. In fine, what makes the comparison between Fairford and Nürnberg so deeply interesting is the fact that in the latter city there are windows, just a little earlier, of the same period,—judging from internal evidence,—and a little later, than those of Fairford. Hence, for the sake of the progress of the science of archæology, it ought to be stated publicly that only a little more study and research is needed in order to clear up many points now in dispute, in reference to these beautiful windows at Fairford.

THE TRADE UNIONS CONGRESS AT LEICESTER.

MR. BRASSEY'S ADDRESSES.

We have already briefly noted the opening of the tenth annual Congress of trade unionists. On Wednesday, the 19th ult., the secretary of the Parliamentary Committee read a letter from the secretary of the Bureau of Labour Statistics, Columbus, Ohio, with respect to the great railway strikes, contending that, though they were attributable to many causes, yet "the hair that broke the camel's back" was a reduction of wages which was ordered to take effect on the several railroads of the State from the 1st until the 15th of July. He detailed the various grievances to which the workmen had been subjected, concluding that all these things together apparently drove the men to desperation; at least, it caused all of them to make a strike.

Mrs. Pattison, of the London Bookbinders' Union, then resumed the discussion on Mr. Halliday's motion:—

"That this Congress approves of the Factory and Workshops Bill introduced by the Government last session, with the amendments recommended by the Parliamentary Committee and others, and requests the next committee to do all they can to secure the passing of a satisfactory measure early next session, and we pledge ourselves to do all in our power to assist in securing this end. Further, this Congress expresses the hope that the Government will stand by the lines of their Bill of last session."

She said she did not intend to move an amendment, but she advocated at great length that women should have an equal right to earn wages in the field of labour with men, and that there should not be exceptional legislation for women, who should be enabled to earn their own living without the undue restrictions now imposed on them.

Mr. Davis (Birmingham Brassworkers) said men in his trade suffered materially from bad ventilation. Scarcely one man ever reached the age of fifty years. Birmingham women worked at the vice and the lathe, which was a disgrace to the country.

Mr. Causey said what was wanted was the reduction of the hours of labour for women.

Mr. Broadhurst reviewed the domestic relations of the sexes, and said some of the women of this country were being employed in work utterly unsuited for them, and they were powerless to drag themselves out of the condition in which they were placed, unless a hand was stretched to them from the outside. The great body of female labour in this country had not the chance of combination, and while he contended that Mrs. Pattison and others had done a great deal to promote unions, they would not even help themselves to drag mothers and sisters out of the hands of those who employed them.

Mr. Gilliver (Birmingham) said they wanted an Act to restrict, as far as possible, female labour.

Mr. Turner (Sheffield) said, if a poll was taken, a large majority of women would vote for working in the workshops.

Mr. Wright (Glasgow) would go for a Bill to regulate the working hours of men as well as of women.

Mrs. Pattison said some speakers thought women should work at appropriate trades. Women themselves thought men had no right to decide which was an appropriate trade. They wanted protection, but objected to Parliamentary protection.

Mr. Birtwhistle proposed:—

"That it be an instruction to the Parliamentary Committee, immediately upon the Factory and Workshop Acts Consolidation Bill becoming law, to call the attention of the Government to the present inefficient staff of inspectors, with a view to the appointment of an additional number of efficient and practical persons as inspectors or sub-inspectors."

He said there were 39,000 factories and 89,000 workshops, and therefore it was necessary that additional inspectors should be employed.

Mr. M'Allan (Edinburgh) seconded the resolution, and pointed out that in some places in the north of Scotland the inspectors were ignorant of the places where work was carried on.

Mr. Solmshaw (Sheffield), and Mr. J. Fox (Bristol), spoke in advocacy of the resolution, which was carried unanimously.

In connexion with the Congress was a largely-attended public meeting, held on the evening of the 19th, when Mr. Guile moved:—

"That this meeting is firmly convinced of the efficiency and power of trade-unions as a means of securing to the workpeople of the United Kingdom a fair share in the product of their labour, and therefore urges the men and women belonging to the various trades to exert themselves to the utmost to extend and strengthen their own particular organisations."

The motion was carried unanimously.

Mr. George Potter (London) moved:—

"That this meeting, regretting the frequent occurrence of strikes and lock-outs, desires to see all questions in dispute between employers and employed, which are not capable of amicable settlement between the parties concerned, referred to a properly constituted board of arbitration, in which the interests of both parties shall be fairly and adequately represented."

Mr. Burnett seconded the motion, and it was supported by

Mr. Thomas Brassey, M.P., who referred to the advantages of arbitration, and then proceeded to answer the self-proposed question, "Why am I here?" He said he felt he was associated more particularly with the capitalist view of the subject, and therefore if it were possible to view labour as an enemy when it was in truth intimately associated with capital, and on equal, fair, and just terms with capital, in order to production, then he might regard himself as in the camp of the enemy. But he did not take that view of labour, and therefore he considered himself at home and among his friends. He was there to express also in a practical form his grateful sense of the privileges he had enjoyed, in part through the faithful services of the working classes to his father. He also stood there because he felt a deep sense of the importance of a friendly personal contract between the various classes of society. It was one of the greatest dangers of the age in which we lived that increasingly large masses of workmen were gathered together under a single employer, who was necessarily a capitalist, and that thus there was an increasing social division between class and class which ought to be bridged over by every possible means. The modifications that had taken place in the industry of the country had rendered trade-unions an inevitable necessity. They had been guilty of some errors which he was not called upon to specify further than that they were an infringement of personal liberty, but their services were such that they deserved the grateful recognition of the country. They had been of great advantage in promoting arbitration and the peaceful solution of trade disputes, and their value had in this respect been endorsed by Mr. Redgrave, the inspector of factories. Capitalists ought to be reminded that trade-unions needed their help, because the great practical difficulty workmen experienced in the face of an increase or decrease in wages was their ignorance of the actual state of trade, which could only be ascertained by an inspection of their employers' books. The only manner in which this drawback could be surmounted would be by unions enlisting the services of men of superior intellectual attainments and of great experience to act on their behalf; men also who would devote their time to the investigation of the commercial aspects of trade, and in whom the workman could place implicit confidence. While, therefore, he could not be blind to the objectionable features of trade unions, he recognised them as embodying a noble, earnest, unselfish spirit of self-help, and as such he respected them, and commended them to the grateful appreciation of his fellow-countrymen.

The resolution was adopted.

At the sitting of the Congress on the 20th inst.,—

Mr. Thomas Brassey spoke on "Work and Wages in 1877." He denied that the volume of our trade had diminished while that of other nations had increased, and pointed out that wages might be higher here than elsewhere, but the labour performed was cheaper from its greater effectiveness, and from the saving of unnecessary supervision. What had been the results of the French treaty? Our imports from France had risen from 17,000,000*l.* to 47,000,000*l.*; but our exports to France, in spite of the heavy duties, had increased 185 per cent. Success could not have been attained except by the co-operation of skilful labour with well-directed capital. The English workman might claim to share with his employer the merit due to that combination of cheapness of cost with excellence of quality which had secured for us the pre-eminence we enjoyed in the export trade of the world. Grave faults were imputed to our working-classes,

and their conduct in many instances deserved censure; but when we looked abroad we heard exactly the same complaints, however low the wages. In those trades in which we were exposed to foreign competition the English workman had in the main performed work fully proportionate to the difference of wages in his favour, and the fact that we were running a close race in some branches with a country where higher wages prevailed than those earned in England was proof that the cost of labour was not correlative with the scale of wages. The American workmen were conscious of the necessity of working hard and well in order to keep up the higher wages which they were at present earning, and any regulations whereby the native vigour of the British workman was restrained must in the end prove fatal in their consequences. No doubt the effects were less baneful, in a commercial point of view, in the building and other trades, which were not brought face to face with foreign competitors; but, considering that improved dwellings were so urgently needed for the working classes, the unwisdom of imposing rules and restrictions tending to augment the cost of building must be patent to all. It was because it was so important to inspire workmen with the hope of bettering their condition that he had always advocated the principle of payment by results. Many trade-unions objected to it, on the ground that payment by the piece led to overwork and bad workmanship. The answer was, that whatever might be the particular form of payment, it was necessary to give to the workman a personal motive for exertion. This must come from the prospect of participation in the profits which had been earned by his labour. His share in those profits should, of course, be proportionate to the amount of labour which he had contributed. The present depression of trade could not be laid wholly, or, indeed, mainly, to the charge of the workmen. If they examined the recent labour movement historically it would be seen that in order of time the inflation of trade preceded the inflation of wages, and the capitalist must bear his share of the responsibility. In the discussions on the prolonged depression, the exorbitant price of labour was continually referred to. They heard but little, however, of the larger share of blame which rested upon the capitalists, the employers of labour, and the investors and lenders of money, who overstocked the markets and caused goods to be sold at ruinous prices, and who, by encouraging speculative building, had raised wages to the present level. In every country and in every line of business the same tendency to overtrading had been manifested. There was a striking instance in the steam communication between Liverpool and New York. New companies had been established, and the fleets of the older firms enlarged. The superfluous construction of numerous costly vessels on the Clyde had had more effect in making labour scarce, and therefore dear, than all the machinations of the local trade-unions. Again, the manufacturing industry of the country, especially in coal and iron, had been injured by the abuse of the facilities afforded by the Joint-Stock Companies Acts for the conversion of private business into corporate enterprises. Mr. Gladstone had denounced in telling language the folly of investors who deluded themselves with the belief that they could expect with shareholders in a company to reap all the profits which had before been earned by trained and experienced manufacturers, who had spent their early lives in the learning and their maturer years in the administration of a complicated industry. Sir E. Beckett had said that (1) unions were a combination to do less work for the given wages; (2) that they taught the fatal doctrine that it was the business of the working men to do no more than the least they could be paid for. These grave charges might be true in a measure, but were not the whole truth. With regard to the second charge, if it were true that bad workmanship was advocated by trade-unions, it must be admitted that the national reputation was still high for the production of many important articles of a quality far superior to that obtained abroad. The existence of trade-unions must be accepted as a necessary consequence of the new phases into which productive industry has entered. The only practical question is how to direct this important and extensive organisation into a useful channel. The working classes were more or less in uncertainty as to the profits employers were realising, and highly-qualified commercial advisers were needed to guide the deliberations of trade-unions on the subject, and they ought to receive an ample salary. It is one of the most regrettable incidents of the organisation of industry on a large scale that the personal relations between employers and their workmen had become less intimate than before. Yet how many prejudices might be removed by an honest interchange of ideas face to face in a spirit of conciliation, and with a mutual and sincere desire to declare the truth and to maintain justice.

Mr. Fitzpatrick (Liverpool) proposed:—

"That this Congress instructs the Parliamentary Committee to make every effort to induce the Government to fulfil their promises to introduce a Bill into Parliament to extend the Employers and Workmen Act, 1875, to British seamen whilst in British waters, and to endeavour to secure that the provisions so introduced are of a satisfactory nature."

Mr. Wheeler (London) seconded the resolution, which was carried.

Mr. Memmott (Sheffield) moved:—

"That this Congress regrets the delay in placing the patent laws of the country upon a satisfactory footing, and desires the Parliamentary Committee to continue their efforts to secure to the inventor by reasonable payments the benefits of his invention."

The resolution was carried.

Mr. Rhodes (Stoke-on-Trent) proposed:—

"That, in consequence of the notorious fact that hundreds of men, and in some cases mere boys, are appointed to take charge of stationary and other steam engines and boilers, and who are in no respect fitted for such an important work, through the want of theoretical and practical knowledge, immense loss of life, injury to persons, and destruction to property occurs; this Congress, therefore, requests the Parliamentary Committee to render all the assistance in their power to any Bill that may be introduced before Parliament to prevent any person taking charge of either steam engines or boilers unless he be in possession of a certificate of competency, which he shall have obtained from a properly-constituted Board of Examiners, appointed by Government for that purpose."

Mr. Juggins (Darlaston) seconded the resolution.

Mr. Waldman (Ashton-under-Lyne) moved as an amendment that a clause be inserted in the resolution including stokers and tenders of engines. This was seconded by Mr. Inglis (Glasgow), but the original motion was adopted.

At the sitting on the 21st, Mr. Broadhurst was re-elected as Secretary of the Parliamentary Committee.

Mr. Shorrocks (Manchester) moved:—

"That in the opinion of this Congress the system known as the 'sweating system' in the tailoring, shoemaking, and other domestic trades is highly detrimental to the best interests of those engaged in them, and being convinced of the danger attendant on the same from a moral, physical, and sanitary point of view; and, moreover, seeing that the system is calculated to spread infectious diseases, we hereby declare our conviction that it becomes a question for imperial and local legislation; and further, we hold it to be the duty of all employers to provide workshop accommodation for those they employ; but where such is not the case, that any part or parts of a dwelling-house so occupied should be a workshop, and registered and inspected as such."

The resolution was adopted.

Mr. T. Brassey, M.P., in the evening addressed a large assemblage of the delegates and others interested in the subject, upon "Labour at Home and Abroad." Mr. Brassey said his conclusion was that to minimise wages was by no means the most effectual method of securing economy of production. It was cheaper and a happier rule to give a fair day's wages for a fair day's work. The prosperity of trade must be a thing little to be desired if it could only be attained at the price of misery and destitution. While there had been considerable advance in the wages of all classes of workmen employed in the construction of railways, the average cost per mile of railway open had remained approximately the same. The inference was that the pressure of the high price of labour had stimulated in the utmost degree the contriving and organising faculties of employers, and profits had been reduced to a minimum. The reaction from the unstable prosperity of 1871–3 had been even more marked in North America, Germany, Austria, Russia, and Belgium than in this country. In the United Kingdom, though the depression had been extreme, there was an increase in production in 1876 in the Cleveland district and in Scotland, and the indications for the future were decidedly more hopeful. In the same spirit of reckless competition which had been exhibited in the coal and iron trades at home, all the foreign markets had been overstocked with British goods, and, in order to encourage sales in a glutted market, prices were reduced. To cover the reduction, manufacturers exercised their ingenuity to produce a showy article of inferior quality. The profits derived from the recently inflated prices gave sudden and colossal fortunes to employers, and unexampled wages to workmen; but the cost of production speedily exhausted the spending power of the consumers, and we saw the result in the number of furnaces idle, and in the reduction of wages. The returns upon capital had been diminished at least as much by rash speculation as by the aggression of trade-unions. Now that the savings of the country were fortunately no longer invested in shares of bubble companies and loans to foreign states, a difficulty had been experienced in finding suitable channels of investment. Money was being advanced to speculative builders which fully explained the maintenance of wages at the present rates. It was not the trade-unions, but the people who lent money to builders, who really regulated wages. The trade-unions, on the other hand, must acknowledge that this was not all. It had been proposed by the unions that the depreciation of prices should be resisted by a limitation of supply, and that the mill operatives should work short time. Such a suggestion must be received with caution, lest by making production more costly they raised the price of British goods in the neutral markets to such a point that we should be undersold by the foreign manufacturers. Again, if so restricting its use prevented the money invested in costly machinery from being reproductive, the result must be that capital would be diverted from manufacturing to other branches of business, where a more satisfactory return could be obtained. In all classes an advance of wages must be made subject to two conditions. First, the cost of foreign labour; second, the scale of prices might be raised beyond the capacity of the consumer to bear them. On the other hand, if the working men offered no resistance to the downward pressure, the reduction would continue until wages had been reduced to the minimum required to cover the cost of subsistence. If labour were cheaper in England, then the workmen would enjoy some advantages as consumers from the reduced cost of living; but how far that reduction would compensate for the reduction of wages it was not possible to say. All political economists were agreed that a high standard of living was a stimulant to industry, and that a low standard of living tended to indolence. A demand for higher wages was only the aspiration to a higher standard of living in another form, and, provided that it were recognised that, for the higher wages, an equivalent must be given in better work and more work, there could be no abstract objection to the demand. The concession of more wages without the equivalent in work was only possible where there was a margin of profit available for division among the workmen. It was the business of trade-unions to gather materials for forming a judgment as to whether such a margin existed. Where it did not exist, and the workman knew that he must do more work or better in order to secure an advance of wages, the aspiration for a higher standard of living was distinctly beneficial both to capital and labour. Having spoken of the condition of labour in the United States, Mr. Brassey proceeded to say that in England there were two great evils with which the working class had to contend—first, overcrowded dwellings; and, second, an overcrowded labour-market. In conclusion, Mr. Brassey remarked that, in every state of life in which men were able to get their own living, there were special consolations, and certainly the wealthy had not a monopoly of happiness. To the wise man riches were a weighty responsibility, and to the weak man a sore temptation; and while the follies of the one were contemptible, the anxieties of the other might sometimes deserve the sympathy of the independent artisan, far as they were apart. The various classes of society depended on one another. In their union consisted our national strength and individual happiness. It was to promote that union he had come among them.

The Congress terminated its sittings on Saturday, the 22nd of September, on which day communications were read from the Universal Socialist Congress of Ghent, and from the Federation of German Trade Unions at Berlin, the latter acknowledging that the English trade-unions had been their models and predecessors, and that their wise organisation, their sound principles, their energy in maintaining the rights of the working men, elicited their admiration.

Stone Carvers' Society.—A dinner took place at the Green Man, St. Martin's-lane, on the 28th ult., to celebrate the fifth anniversary of the establishment of the Stone Carvers' Society. This association, established in September, 1872, has met, we are told, with continued success.

SANITARY INSTITUTE OF GREAT BRITAIN.

A Sanitary Congress, under the auspices of this Institute, was opened at Leamington on Wednesday last, when the president, Dr. B. W. Richardson, F.R.S., delivered an inaugural address, mainly devoted to an exposition of his theory as to the origin and course of the various epidemic diseases or spreading pestilences which affect mankind. This theory, which he advanced many years ago, and described in a lecture at the Sewage Congress at Leamington in 1867, has been overshadowed by the subsequent introduction of the German theory. The president's object was again to give publicity to his view, and to prove it to be more practical and demonstrative in character than the German theory. The latter theory supposed that spreading diseases are produced by the introduction of the germs of disease into the body. It is assumed that these germs lie outside the body, and are carried into the organism, which absorbs them and enables them to act as ferments from which the specific disease arises, each disease having presumably its own germ. The theory which Dr. Richardson expounded is that these diseases are produced by poisons, springing simply out of the animal secretions of the affected body. He insisted that instead of looking for a living self-productive organisation like a germ as the cause of maladies, the force of production of the poisons was the force of secretion of the living animal, and that just as an animal like the cobra is always producing poisons by secretion, so a person affected with a contagious disease poisons by virtue of a similar action. Each secretion of the body produces its particular poison under conditions unfavourable to its healthy action, or under conditions when it receives into itself actual poisonous matter by direct contact. He held that this view accounts for the production of all the existing poisons causing communicable diseases, also for the number of those diseases and the limitation of the number. An interesting portion of the discourse related to the spontaneous origin of the communicable diseases as distinct from origin by direct exposure to poisonous matter. The president argued that as all the glandular secretions are under direct nervous influence, so in some cases extreme depression of the nervous power, as from starvation, bad food, overcrowding or other similar depressing causes, may give rise to such a change in the secretion that it becomes poisonous, independently of the idea of inoculation by poisons introduced from without. He showed that in London a person thus affected may become a centre of contagion because he is himself producing a poison, which, coming in contact with the secretions of other persons not previously affected, is capable of communicating the specific disease; and he urged that for a similar reason as to the origin there is a hereditary tendency to the epidemic diseases in many persons. This was due to the nervous impression made by the disease on the parent, which impression is transmitted to the offspring so as to affect the glandular function, and predispose to disturbance of function, which leads to production of the disease. He believed that typhoid fever, diphtheria, scarlet fever, and probably small-pox, were distinctly of this hereditary character. Concluding with the practical application of the knowledge of glandular theory in relation to sanitation, the President said:—If the *contagium vivum* view be true, the air around us is charged with invisible germs which come we know not whence, which have unlimited power to fertilise, and which need never cease to fertilise and multiply. What hope was there for the skill of man to overcome these hidden foes? Why on some occasions may not a plague spread over the whole world and destroy life universally? My theory presents a different aspect. I say to men and women, it is you who are producers of communicable disease, or it is one of your lower earthmates in creation. I look on the man or other animal affected with a contagious disease as one in the position of the cobra, and I see the danger is all but limited to the person affected. Isolate that person from the rest of mankind, take care his secretions do not come in contact with those of susceptible healthy persons, and the danger is over. With his recovery the poison is destroyed. If my theory be true, we sanitarians have a complete mastery over the diffusion of poisons of all communicable diseases. We can limit the action to the propagating power of the affected body all but completely. Beyond this we must expect to reduce the tendency to communicable diseases in succeeding generations, until in time the hereditary susceptibility to a particular spreading disease shall be thoroughly wiped out. The theory suggests a profitable line of research on the production and reproduction of some poisons by inferior animals, and their transmission in due course to man. The theory finally suggests to those engaged in treating diseases of a communicable kind the best means of arresting the progress of a communicable disease, even when the phenomena of it have been developed in an individual; it leads us to take a precise view of each case of the nervous and glandular processes, and one out of the natural order of work; it suggests to us to seek for remedies and chemical agents which affect special secretions; and it shows us how to place the sick under such conditions that they may avoid the second absorption of their own poisonous secretions, which is the actual cause of death in the majority of cases of contagious disease. In fine, in every direction, in prevention or cure, the glandular theory of the origin of communicable diseases opens out practical and hopeful work.

In connexion with the Congress there was an exhibition of sanitary appliances, of which there were 300 entries.

THE MASONS' STRIKE IN LONDON.

According to the *Standard* of the 2nd inst., out of 1,700 operative masons who turned out on strike nine weeks ago, there now only remain about 600 out of work, and there are at the present time between 1,300 and 1,400 men at work at the advanced pay.

The Master Builders' Association say in reply to this statement that it is open to various interpretations, but they altogether deny its correctness. The *Standard* goes on to say:—

> One hundred and nineteen masters in London have acceded to the demands of the men, and paid the additional penny per hour. Of these are the firms of Scrivener & White, who employ now about thirty masons; Peto's firm, who employ about the same number; and Newman & Mann. Killby, of Limehouse, has also conceded the demand, and the firm employ about sixty masons. The largest concession, however, has been that of a private firm engaged in building operations in Victoria-street, who are now employing about 100 workmen, each of whom is receiving 10d. per hour and pays the levy to the society.

The master builders say, in reply to this, that the above-named building firms have altogether about 100 masons employed on very urgent matters only; and as to the private firm alluded to, they have no knowledge of it. The "private firm" is stated to be a solicitor, who probably has no sympathy with one side or the other. The masters express their intention of waiting the return to London of the masons who are now scattered over the country, and they hope (from information they are said to have received) that this will take place shortly. It is stated, however, on behalf of the masters, that they are now becoming indifferent as to getting on with work during the next three or four months, as "they know by experience that mason's work done in the short days of winter is never profitable." Their shops are now open at 9d. per hour, or about 2l. per week, to good ordinary masons, and they are prepared to pay good fixers an increase, and also to enable skilful men to earn more money by piecework if they please. They consider that 9d. per hour is excessive for many so-called masons. The cessation of masonry is now beginning to cause a slackness in other branches, and with the winter coming on prospects are not very bright for many men who will have "no work to do" from the obstinacy of others.

BRIGHTON AQUARIUM.

A much-needed improvement is in progress in the Brighton Aquarium. For some time past the stage for the musical and dramatic entertainments,—with which experience shows it is necessary to supplement the science of the establishment,—has occupied the rockwork-fernery, and conservatory at the east end of the building,—one of its prettiest parts. A stage is now being formed in a recess on the north side of the conservatory, so as to restore the fernery to the general promenade. It is to be regretted, but it nevertheless is a fact, that popular science alone will not pay a dividend; the Panopticon becomes the Alhambra, the Educational Courts at the Crystal Palace are insufficient without farces and fireworks; and an aquarium, whether at Brighton or elsewhere, to succeed financially must provide music with the mollusks, and songs as well as sea lions. It is satisfactory, however, to observe at Brighton that the real purpose of the Aquarium is well thought of. The fish are kept in splendid condition, and fresh subjects for study are constantly provided. It is evidently a very popular institution, and the Corporation might wisely withhold a little of the opposition to its development which they seem always ready to exhibit. There is a wonderful tank just now full of anemones, jelly-fish, and such like, a perfect garden of sea flowers; and in another a shoal of herrings serves to make clear that whitebait consists mainly of the young of that family, as Mr. Reeves Smith, the general manager, traces its origin to a netful of that favourite succulent.

THE WALLS OF ST. ALBAN'S ABBEY.

We have already mentioned that it is proposed to restore the clearstory and triforium on the south side of the nave to an upright position. The course to be adopted, speaking in the broadest way, is this:—The north wall of the nave will be securely shored inside; iron rods and screw-nuts will tie this and the southern wall together; raking shores will be placed against the south wall outside; and under the foot of these hydraulic pressure will be applied, while the screw-nuts are made to operate on the rods. A description of the intended process, with illustrations, will be found in the *Engineer* of September 21st (p. 199, &c.). Mr. Chapple, the clerk of the works here, under Sir Gilbert Scott, has had much experience in dealing with enormous weights, having been recently engaged on the works at the tower of the church of St. Nicolai at Hamburg, the height of which is 485 fr. 6 in. In restoring it to a vertical position, over 2,000 tons of brickwork had to be put into the foundation to secure a firm footing on the shifting sands which exist in the neighbourhood of the Elbe and upon which the church stands.

THE ROAN SCHOOLS, GREENWICH.

If an Elementary Education Act had been in existence some generations back, and School Boards in operation, it is probable that some of the benefactions devoted to the education and maintenance of "poor and miserable youth" would have been otherwise directed. Board schools, in so far as elementary education is concerned, are now performing, to a large extent, the duties hitherto fulfilled by charities, and the increasing funds of a number of educational charities are in consequence released, and applicable to altered uses. Under the provisions of the Endowed Schools Act of 1869 these funds have been in numerous instances diverted to the establishment of middle-class schools for secondary education; so it has been in the case of Robert Aske's charity, in the new schools provided at Hoxton, and at New-cross. Another instance is presented in the new schools, one just completed, in connexion with John Roan's Charity at Greenwich. The beneficiaries of the Roan's Charity have hitherto been a certain number of boys and girls born in the parish, and orphans, or the children of indigent parents, who have received instruction and clothing at the expense of the funds of the charity, which, coming within the operation of the Act of 1869, has been remodelled, under a scheme by the Endowed Schools Commissioners.

By the new scheme all rights of the former governors were transferred to the Queen, and their powers abolished. The new governors are, *ex officio*, the four local members of the London School Board, or persons nominated by them; eight governors elected by the ratepayers of East and West Greenwich; and four co-optative governors, appointed by the feoffees and trustees in the first instance, and afterwards by the other governors; it is provided that two of the co-optative governors, who hold office for six years, are to be women. Provision is made to satisfy "vested interests." The fees are to be paid for present scholars in such elementary schools as their parents may select, an equivalent for clothing is also to be allowed. The present master is to receive an annuity of 150l. per annum, unless he obtain employment, concerning the value and suitability of which the Charity Commissioners are to be the judges, their decision to be binding. The new governors are to apply 150l.

per annum towards public elementary schools in Greenwich, in one or more of the following ways:—1. Free places or prizes to meritorious scholars; 2. Exhibitions to enable scholars to remain longer at school; 3. Lending-libraries for the use of scholars; 4. Maps for teaching physical geography, drawing lessons and models, scientific apparatus; 5. Lectures or evening classes for the elder scholars; 6. Additional playground accommodation, gymnastic apparatus, extension of military drill, musical instruments for band, &c.; 7. Industrial instruction, tools, carpenters' shed, and field gardens for boys; kitchen and laundry for girls.

The scholars may be exempted from attendance on religious worship and prayer, under the new scheme. Candidates for admission undergo an examination embracing reading easy narrative, writing text-hand, and sums in the first two rules of arithmetic. The fees are to be 2*l.* per term, with 1*l.* entrance-fee, to be divided into three terms; vacations, eight weeks in all. Books and teaching apparatus are supplied by the governors. The course of instruction, in addition to teaching in the Holy Scriptures (optional with parents), will include for boys, reading, writing, arithmetic, algebra, history, and geography; grammar, composition, and literature; political economy; book-keeping; and vocal music. Latin, French, or German, or any two of these languages. Free-hand, model, and perspective drawing; practical plane geometry, and machine drawing. Mathematics, mechanics, inorganic chemistry, acoustics, light and heat. The Governors may also direct that the following, in lieu of some of the preceding, may be taught,—navigation, practical and experimental science, and drawing, with particular reference to mechanics and engineering. In the girls' school household management, the laws of health, and needlework will be subjects of instruction. There will be an annual examination of the schools by examiners from the English universities or from the College of Preceptors. Provision is made for training student teachers in the schools, and a sum of 500*l.* per annum will be applied for scholarships to meritorious scholars, with an additional 300*l.* for scholarships to scholars of Roan's Schools to be available for other schools.

The two schools are designed to accommodate 300 scholars each. They will cost about 6,000*l.* each. Fifty pounds per annum is to be set apart for repairs and improvements. The schools are to be for day-scholars only. The head-master and head-mistress are to receive salaries of 100*l.* per annum each, and capitation allowances of not less than 20*s.* for each scholar. They must not hold any other benefice, and the master must not have a "cure of souls." The head-master and head-mistress, on engagement, sign an agreement providing that they may be discharged by the governors without any reason assigned, and relinquishing all claim upon them.

The boys' school in East-street is from the designs of Mr. Robert Walker, architect. It is to be regretted that the building should be immured in a narrow street, affording no point of sight from which it can be seen to advantage. It is near the southern border of Greenwich Park and Maze-hill, in a street that connects Maze-hill with East Greenwich chief thoroughfare.

The main entrance leads to a paved vestibule, 10 ft. wide and 23 ft. long, that contains also the staircase. Behind the vestibule is a corridor with a glass screen, that is extended upwards on the first floor. The corridor conducts on the right to three class-rooms, each 23 ft. by 19 ft., and on the left to a dining-hall, and a cloak-room and lavatory, each of the same dimensions as the class-rooms. To the rear of the central building is a lofty hall, 44 ft. by 30 ft., furnished with a platform at the inner end. The hall is lighted by a large three-light window, a smaller window on each side, and by a glazed louvre in the roof. It has an open roof of pitch pine, springing from stone corbels, the principals and boarding being stained and varnished. The artificial lighting of the hall is by inverted ⊥ pendants. The other appropriations of the site on the ground level are a spacious playground, of which a space—50 ft. by 15 ft.,—is covered, and has a bench fixed along the back wall. The further corner has the boys' latrines. The front has the caretaker's living-room, 13 ft. by 11 ft., and over it a chamber, considerably larger. On the first floor are the head master's room, with retiring-room, closets for stationery, books, &c., and four class-rooms; these rooms are of the uniform dimensions of 23 ft. by 19 ft. A second floor in the central building has a room for drawing, 25 ft. by 19 ft., lighted chiefly from the roof. The windows and frames are of pitch pine, the doors, dados, and other timber work are of red deal, stained and varnished. Above the dados, which are 4 ft. 3 in. high, the brick walls are coloured in distemper; the colours are French grey and cream colour. The windows are glazed with rolled plate, and are fitted with Shadbolt's patent for ventilation; Steers's patent grates are used; and Jennings's tip-up basins and fittings in the lavatories. Hobbs & Co.'s patent mortise locks are fixed on all the doors. Mr. Hammer has supplied the school-desks and furniture.

The principal fronts are in white Suffolk brick, relieved with red brick, and at the entrance with Bath stone. The stairs are of Yorkshire stone, with plain iron rail. The work has been executed by Mr. Andrew Killby, contractor, with Mr. Robert Pattison as clerk of the works, and Mr. S. T. Scott, contractor's foreman.*

The school was formally opened on Friday evening of last week by a meeting in the hall, over which Dr. Prior Purvis, chairman of the Board of Governors, presided. The meeting, got together by Mr. Wm. Buck, the energetic secretary of the Greenwich School Board Division, and of the Roan Schools, was numerously attended. On the platform and in the room we noticed Sir G. B. Airy, Astronomer Royal; Mr. Jno. M'Gregor ("Rob Roy"); Mr. T. W. Boord, M.P.; the Rev. Dr. Hill, Greenwich Hospital; Mr. Batchelor, clerk to the trust; and, of the governors, Mrs. Hooper, Messrs. Henry Gover, Dannatt, Smith, Bromley, Mitchell, Coomber, Bookham, Ridger, the master of the school, &c. Interesting and appropriate addresses were delivered by a number of the gentlemen named. From a statement of the chairman it appears that the site of the new schools cost 700*l.*, against which is a rental of 60*l.* per annum for the old school and property in Roan-street. The proceedings were, on the whole, although not perfectly harmonious, satisfactory. The school was opened for the reception of scholars on Monday last.

* On another page will be found a letter from Mr. Diniwiddy, the architect of the girls' school, complaining that his design has been made use of by the architect of the boys' school, which he considers especially hard upon him, as the latter has been erected first. He forwards at the same time, with copies of correspondence, views and plans of both schools, which certainly exhibit a strong family likeness. Mr. Walker, in one letter, denies having seen Mr. Diniwiddy's plans, and in another says, with amusing frankness that he does not claim credit for any great originality as an architect; that his design in the present case was founded to a considerable extent on a school illustrated in Mr. Robson's "School Architecture" (pp. 301, &c.); and that he thinks the design for the girls' school resembles this even more than his own!

NEW HOTELS IN GLASGOW.

For the tourists and business men who are in the habit of making a periodical journey north of the Tweed, many, either from chance or necessity, make the great metropolis of the western district of Scotland one of their chief halting-places. To such, the vicinity of George-square, with its lines of handsome hotels and conclave of statuary, will be quite familiar. The future visitor to Glasgow, however, who may feel disposed to do so will find no difficulty in changing the *locale* of his temporary residence in that populous city, inasmuch as in the hotel department building enterprise is fully keeping pace with the rapid development of the trade generally,—several large structures devoted to the purpose indicated being now in course of erection in the west end and elsewhere. Perhaps the most commodious and imposing of the new hotels is that entitled the Charing Cross, built by Mr. Duncanson, in Sauchiehall-street, the frontage, extending from Falkland-place to Woodside-crescent, a distance of 144 ft. in Sauchiehall-street, 155 ft. along Falkland-place, and 101 ft. along Woodside-crescent. The height above the street level is about 83 ft.; the building has four stories and basement, the style being Modern Italian. The leading feature in the exterior is the appearance of the south front, Ionic pillars projecting from the line of building flank the principal entrance, from the top of which latter spring four Corinthian columns, plain and fluted, with a window between, filled in at the top with ornamental shell-work. These columns support a carved balcony, the level of which is somewhat above that of the second floor, and from the balcony spring two other columns, surmounted by a carved entablature, with ornamental recess for a clock. Windows are plabed between the various columns, and a semicircular dome, with cast-iron fretwork, forms what may be called the central tower. The main front is also ornamented with bay windows, balconies, and cornices, a heavy balustrade, divided by dormer windows, running along the top of the wall. Turning to the Woodside-crescent frontage, we find a porch with columns, large bay windows with fluted columns and Corinthian capitals, springing from a heavy cornice, which runs along the whole length of the building. These windows are carried up to the level of the third floor, the fourth story being finished with Venetian windows, circled windows, and balconies resting on heavy corbels. The Falkland-place frontage is more simple. In the interior, the large dining-hall is a prominent feature, being reached from the grand corridor communicating with the main entrance by a flight of marble steps. The dining-hall is more than 67 ft. in length by 40 ft. in width, the height from floor to ceiling being 24 ft. Columns with Corinthian capitals are ranged along the side walls, while at each end is a Corinthian pediment, with four supporting columns. The windows on the southern side of the hall are plain, light being admitted from the corridor, but those on the north will be filled in with stained glass from the studio of Messrs. Kier, St. Vincent-street. These northern windows are six in number,—three being embellished with portrait heads of Shakspeare, Burns, and Moore, as the representative poets of England, Scotland, and Ireland, and scrolls with quotations and illustrative designs. The main corridor, which is about 100 ft. in length, with a breadth of 16 ft., is roofed with stained glass by the same artists. At the western end in the next floor is the grand drawing-room, an apartment some 56 ft. long by 30 ft. broad, and having a height of 15 ft. The decorative work is rich in character, and at the northern end of the room is a fine chimney-piece in white marble supported by columns of the same material, with Corinthian capitals. The architects are Messrs. Baird & Thomson, Bath-street. Mr. Duncanson, the proprietor, has undertaken the mason work; and the contract for joiner work has been carried out by Messrs. Miller & Bannerman, Glasgow. It is expected that the new hotel will be ready for occupancy at the end of two or three months.

A fine new hotel is also in course of erection by a limited liability company on a portion of the ground acquired by the Caledonian Railway Company for their new central station in Hope-street and Gordon-street. The frontage of the new hotel will extend 216 ft. along Hope-street, where the principal entrance will be placed, and 127 ft. along Bothwell and Waterloo streets respectively. While the designs for the exterior are of an effective character, there will be no lavish display of ornamentation. The frontage wall will rise to a height of four stories above the street level. It is intended that a spacious arched glass-roofed arcade shall run along the centre of the buildings. The length of this arcade will be 129 ft., the breadth 30 ft., and the whole of the ground-floor will be occupied by ranges of shops. There will be three entrances to the arcade on different levels from Hope-street, Bothwell-street, and Waterloo-street, respectively. The ground-floor of the hotel facing these three streets will also consist of ranges of shops. The main hotel entrance will be from Hope-street, leading up through a handsome corridor to the principal apartments. The dining-room will be 56 ft. in length by 22 ft. in width, with a height of about 16 ft. At the opposite and farther end of the corridor the vista approaches the coffee-room, an apartment 45 ft. by 25 ft. The plans include numerous parlours, sitting-rooms, and bedrooms, and all conveniences for carrying on an extensive business. The architects of the new building are Messrs. Peddie & Kinnear, Edinburgh.

A third new hotel is the Alexandra, at the corner of Bath-street and Campbell-street, just off Sauchiehall-street, and recently opened by Mr. John Macrae. The structure is from designs by Messrs. A. and G. Thomson & Turnbull, architects, Wellington-street, and has been in course of erection for about two years. The frontage to Bath-street is 45 ft. in length, the height here being five stories with basements, but the building running back for 97 ft. along Campbell-street to Sauchiehall-lane, the fall in the ground towards Sauchiehall-street has necessitated a sub-basement. In treating the building the architects have adopted the Greek style, the exterior walls being plain, with the exception of the upper story, which consists of

pilasters and a well-proportioned truss, the whole surmounted by a massive cornice. Mounting the flight of stairs from Bath-street, the visitor finds himself in a handsome reception-room, lighted by two large windows of plate-glass, reaching almost from floor to roof, a height of 16 ft., and all the decorations and appointments of which are appropriate and luxurious. The coffee-room is placed at the end of the hall, the extremity of the room near Bath-street being a sort of continuous window, in front of which runs a balcony supporting evergreen plants. This room is 40 ft. in length, 28 ft. in width, and 16 ft. high. The bedrooms are sixty-four in number.

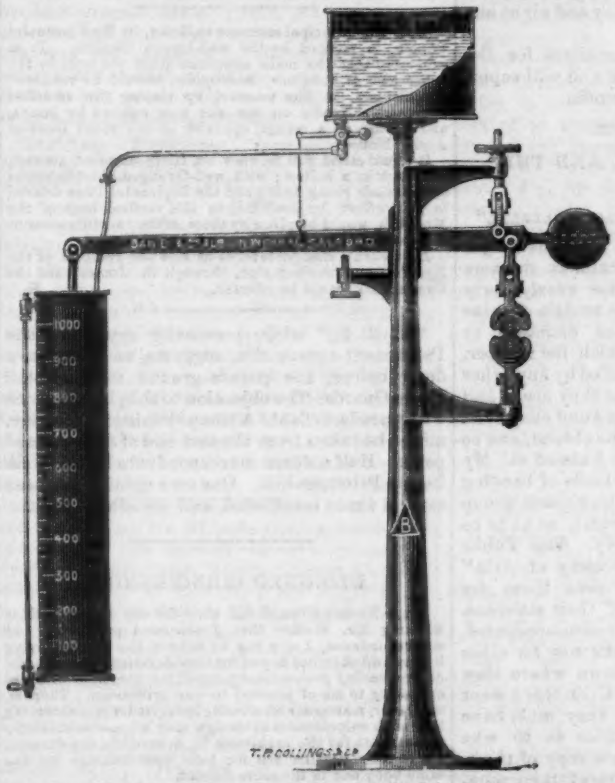
RURAL SANITATION.

This was the subject of a paper read before the Society of Engineers on Monday evening last (Mr. Thomas Cargill, president, in the chair), by Mr. G. W. Usill. The author divided his subject into three heads, namely, drainage, cottage buildings, and water supply. He dwelt on the repeatedly-told catalogue of evils following in the wake of neglected sanitation in rural districts, and sought to show that in many villages a good system of sewage-disposal and a pure water-supply might be obtained for a few hundred pounds, so that the bugbear of cost need not stand in the way where there was the will to undertake the work. Wherever possible, he would remove the sewage by water-carriage, as that mode of removal was at once the most natural, and the one that needed no supervision whatever. Where the sewage could not be utilised in irrigation, he would conduct it by pipes to an hermetically-sealed and water-tight reservoir some little distance from the villages, thence to be pumped up and sold to the farmers for manure. Such means of disposal of the sewage need create no nuisance if properly carried out. The ordinary midden and cesspool system should, however, be at once and for ever abolished. He was opposed to the earth-closet system, and to pail systems generally, on the ground that the labour of removing the pails would be repugnant to any one of delicate susceptibilities. The cost, too, was against the use of earth-closets, as the cheapest contrivance of the kind would cost 1*l.* 10*s.* In addition to this, the earth-closet system rendered constant and efficient supervision a *sine quâ non*. For isolated mansions and large institutions in the country, or in similar situations where intelligent supervision could be given them, earth-closets might be very good things, but it was a mistake to suppose that they would be a success if applied to the dwellings of the mass of the rural population. With regard to cottage building, the author strongly condemned the smallness of the rooms in which agricultural labourers and their wives were "cabinn'd, cribb'd, confined." Until landowners seriously asked themselves how they, with their wives and children, would like to live in such small, low-ceiled rooms, the rural population would not cease to be badly housed. Want of ventilation was one of the most notable defects in the cottages, such as they were, of our agricultural labourers. As a rule, it would be better to erect cottages with two or three large and lofty rooms than with three or four small ones. As to water supply, the author strongly condemned the apathy shown by landowners and others in permitting villagers to draw their water from shallow wells saturated with pollutions percolating from adjacent cesspools, or from brooks and streams which were made the receptacles for sewage and manufacturing refuse, as well as being used for sheep-washing and similar purposes. Deep wells and proper mechanical appliances would at a very low cost afford an abundant supply of pure water to most villages, and in this connexion such simple contrivances as those supplied by Messrs. Gwynne & Co. deserved attention. The roofs of cottages, farm-houses, churches, and schools should be utilised in the collection of the rainfall, which should be conducted to properly cemented impervious underground storage reservoirs. In this way an ample supply of water sufficiently pure for most purposes would be secured at a very trifling cost.

A discussion followed, in which Messrs. Rigg, Schönheyder, Allen, Vaughan Pendred, Jabez Church, Perry F. Nursey, Bernard Dyer, F.C.S., and the president, took part. In the course of this discussion it was pointed out (especially by Mr. Pendred) that although it might be quite true that a capitalist or a benevolent landowner could, for a few hundred pounds, supply the means of efficient water supply, there was more to be done after that. The works had to be maintained and kept going; organisation,—local government, in fact,—was wanted to take advantage of the means afforded by the capitalist or landowner. Mr. Bernard Dyer remarked upon the defective way in which deep wells were lined. Wells that, were they provided with an impervious lining, would yield pure water, were turned into media of contagion, through the ignorance or parsimony which would allow the contents of cesspools to drain into the wells whence potable water was drawn.

A CEMENT TESTER.

At the Exhibition of Sanitary Appliances recently held at Owens College, Manchester, Messrs. W. H. Bailey & Co., of the Albion Works, Salford, exhibited one of Reid & Bailey's cement testers. This instrument, which we illustrate, differs from most other testers in the way in which the breaking pressure is brought to bear. All other testers have the pressure exerted



upon the material under experiment by means of a screw, or by separate weights, which are placed upon a beam. These methods create a slight vibration of the instrument, which interferes with the accuracy of the test. A novel principle has been introduced by the designers of this machine. A small stream of water descends slowly into a graduated cistern, which is fixed at the end of the beam, and indicates the weight of the water in it. The moment the material under test is broken a trigger is released which stops the water and the graduated scale shows what pressure has been exerted. The section of cement tested by this machine is one square inch in area. It will be seen that the operator may place the cement in the jaws of the instrument, and he may quietly sit down after turning on a tap, and, after waiting a few minutes, see the test automatically performed, without in any way interfering with its accuracy by imparting any undue vibration to the instrument.

This machine has been made at the suggestion of Mr. Reid, who has experimented upon it, and whose name is known in connexion with Portland cement from his work published by Spon.

The Channel Tunnel.—Operations connected with the submarine tunnel have been commenced on the other side of the Channel, several pits having been sunk to the depth of about 110 yards. At the same time the French and English committees have definitively drawn up the conditions of working for the route. The property of the tunnel is to be divided in half by the length,—that is to say, each company will possess half of the line, reckoning the distance from coast to coast at low tide. Each company will cover the expenses of its portion.

THE INNER CIRCLE RAILWAY.

Sir,—From a plan which has been published of the route to be taken by the short line which is now to be constructed, after years of delay, to connect the Metropolitan District Railway at the Mansion House Station with the Metropolitan Railway at Aldgate, I notice that the present Aldgate Station is to be "left out in the cold," in other words, isolated at the end of a short spur of line jutting out from the "inner circle" system, so that trains running in either direction will not pass through it. This isolation will be caused by the new connecting link being made to curve northwards slightly to the west of the present Aldgate Station, joining the existing line between Aldgate and Bishopsgate-street, near the Clothes Exchange in Houndsditch.

Surely this is a serious mistake. By continuing the connecting line rather more to the eastward it might be made to pass through the existing station at Aldgate. Whatever extra cost might be incurred through interference with property in Aldgate High-street would be counterbalanced, I should think, by the non-interference with property in Mitre-street, Duke's-place, and Houndsditch, under which latter thoroughfare the line as at present proposed would be carried in an oblique direction, involving the demolition of a great deal of expensive property.

The line is to be carried eastward from the present Mansion House Station under Cannon-street, the first station being between Walbrook and St. Swithin's-lane, to allow of an interchange of traffic with the South-Eastern Railway. The next station will be at the corner of Grace-church-street and Eastcheap, and so will involve the demolition of the offices of the National Provident Institution, newly erected a few years ago under the direction of Professor Kerr. From the corner of Eastcheap to Fenchurch-street a new street will be made, underneath which the new line will be constructed, and towards the cost of which the Corporation of London and the Metropolitan Board of Works have jointly undertaken to pay half a million sterling. The street will be 1½ furlong in length, and the line will be continued beneath Fenchurch-street to Aldgate, where it is proposed to have a new station between the site of the Old Pump and Jewry-street.

That it will be a mistake to have two stations within so short a distance of each other, when one would suffice, is obvious, even though (as will not be the case in this instance) both should be on the line of through traffic. An example of this is afforded by the Ludgate-hill branch of the Chatham and Dover Railway. The Borough-road Station and the Elephant and Castle Station are almost within a stone's throw of each other. The first is like a deserted wilderness, being almost destitute of traffic, whilst the last is hidden away in a slum. One station midway between the existing stations, and at a point within sight of each, namely, where the line crosses Newington-causeway, would have been more accessible, and would have paid better than the other two stations combined, as it would have had access to and from a busy main thoroughfare. If, then, it is a mistake to have two stations so close together even when they are both on the line of through traffic, how much greater will be the blunder in the case of the Aldgate stations, one of which will be completely cut off from the circular traffic north and south of the City? Certainly the short spur with the existing station at the end of it might serve as the commencement of a new trunk line to be carried eastward beneath the Mile-end and Bow roads to Stratford, but unless such a line is constructed, the *raison d'être* of the present Aldgate Station will be gone if the new connecting-line is made as it is proposed to make it,—which I hope, in the interests of the public, the company will not be allowed to do.

D.

COUNTY OF DURHAM.

SEDGEFIELD NEW AUXILIARY ASYLUM FOR 402 CHRONIC PATIENTS.

In response to advertisements, asking tenders for the superstructure of these buildings, no less than 130 tenders were received, containing 411 distinct offers. Of these, twenty-two were sole tenders for the main buildings, and twenty-three for the lodges and entrance-gates, while eighty-five were for the separate trade sections, in each contract. The competition seems to have been very keen, and shows that builders in the district are anxious to secure work, if not to realise profits, to keep their establishments together till better times are forthcoming. 40,000*l.* was the amount voted by Quarter Sessions for the work, but it will be completed considerably under that sum. The work is of a plain yet neat and substantial character. Every improvement has been adopted that could in any way add to the comfort and convenience of the patients; and, irrespective of the administrative block, containing assistant-surgeon's house, committee-rooms, large dining and amusement hall, kitchens, sculleries, &c., and all connecting corridors. The patients within their wards will have a united day and night air-space of 1,640 cubic feet.

Mr. William Crozier, C.E., architect for the county of Durham, has designed and will superintend the carrying out of the works.

THE HIGH-ART LOVER, AND THE ARTIST.

HENNING'S MODELS OF THE "ELGIN MARBLES."

About five years ago I was desirous to get framed a collection in my cabinet drawers (which had been stored up for nearly forty years), of Henning's miniature models of these exquisite figures (with all the damaged or missing parts restored), and which for number, grace, and variety, are not equalled by any other artist in the world. Beautiful as they are, I had only met them in *one private hand* and *one public* institution. The former had gone abroad, and so was inaccessible for the purpose I aimed at. My object was to ascertain the best mode of banding together such delicate compositions (each group about 9 in. long and 2¼ in. wide), so as to be neither too slight nor too heavy. The Public Institution I knew to be the "Society of Arts" in the Adelphi, where I had seen them for years hanging upon the walls of their staircase. However, upon applying there I was disappointed, they had been removed to make way for other good things, and it was not known where they were deposited at that time.* Upon this I went to the British Museum, where they must have been modelled, to make inquiries as to who possessed the original works or a copy of them. The custodian referred me to one of their number much older than the rest, who although he could not satisfy my object, related the following anecdote concerning them. He said (speaking of the past), "One day a gentleman who had been at the museum several times, brought with him a number of these models and laid them down on the floor in front of the corresponding groups of the Elgin collection to note and admire their fidelity, so far as the mutilated figures afforded comparison. It so happened that whilst the stranger was absorbed in this critical occupation Henning himself passed through the gallery, and struck by the sight of his models spread on the ground, asked to whom they belonged? The stranger replied, with some complacency, that they belonged to him. 'How did you obtain them?' was the rejoinder! 'I *bought* and paid for them! But what right have *you* to question me?' Henning said no more, but deliberately stamped his foot upon the face of one group, and another, and another, until nearly the whole were smashed into a thousand atoms! 'Custodian! I give this man in charge, he has wilfully destroyed my property; I will have him taken into custody, and go before a magistrate!' was the stranger's excited raving at his injury. 'Sir,' said the attendant, 'I *know this gentleman*' (pointing to Henning), 'and he is much respected here, and I *don't know you!* You must go to the keeper or principal librarian of the Museum.'" To the keeper the stranger accordingly went, and upon relating his distress was told that the attendant was quite right, that he (the stranger himself) was the offender against law and order: he had trespassed in bringing his property, occupying the space devoted to the public, and creating great disturbance on the premises; he might appeal in any way he thought proper, but must not rely on any aid from him! Now, as no more was heard of the catastrophe, it is reasonable to conclude that the high-art lover had discovered that the casts he possessed were indeed true casts of the artist's own wax models, but the matrix moulds had been dishonestly used, perhaps by the journeyman he had employed to assist him in the mechanical labour of preparing them, and forgave the talented author more for the abuse of confidence to which he had been subject than for his own personal loss. J. Thomson.

* At a later period, by courtesy of Mr. Foster, Henning's models were found.

THE OBELISK AND ITS PEDESTAL.

Sir,—Will you allow me to suggest the propriety of designing the pedestal for the obelisk from the terms of the ancient cubits, and not the English foot? For the absolute lengths of the cubits and their numerical relations, or, at least, some of them, see my letter in the *Builder* of June 16th last. W. Hayden.

Sir,—The principal entrance to Rome, by the Piazza del Popolo, is marked by the well-known Obelisk. It is suggested that the main approach from the west by the court end of this, our, metropolis, should be rendered conspicuous, in like manner, by placing the so-called Cleopatra's Needle on the site now marked by lamps, and serving as a refuge, opposite to the south front of Apsley House.

It would stand full in view on fairly elevated ground, not sunk in a hollow; with well-thronged thoroughfares of approach rising to it; and the horizontal lines desired to give effect, by contrast, to the vertical ones of the Monolith, would be given by those of the two entrances to the parks on either hand, and, of Apsley House.

Last week's *Builder* teaches us how the removal of the Needle from the river side, through St. James's and the Green Park, could be effected. N.

"T. R. S.," while personally approving the Parliament-square site, suggests, as many have done before, the parade-ground west of the Horse Guards. The objection to this, interference with parade, is final. A site adjoining it, however, might be taken from the east end of the enclosed park. Half a dozen correspondents foolishly reiterate Primrose-hill. Our own opinion has been several times mentioned, and we adhere to it.

DESIGNED COINCIDENCES.

Sir,—Having allowed full time for any objection since advising Mr. Walker that I proposed publishing our correspondence, I now beg to submit the accompanying letters and sketches to you for consideration, as conductor of our leading professional journal, the questions involved appearing to me of interest to our profession. There is, moreover, matter for interesting speculation in considering how such coincidences in design may arise,—particularly unfortunate for the architects in a case like the present, where their designs are for twin undertakings for the same body and in the same district.

Briefly, the architectural history is as follows:—In 1874 designs were invited from six selected architects for the Roan Girls' School, resulting in the selection of my design, and in September following my prize design was published. In 1876 the Governors of the Charity advertised for competitive designs for the proposed Boys' School, and upwards of twenty designs were the prolific result, more than one of which were, I am told, recognised even by the non-professional judges as parodies upon my published prize design.

In this second competition my work was awarded second premium, Mr. Walker being placed first. Protracted discussions between the Governors and the Charity Commissioners had meanwhile delayed the erection of my girls' school, whereby the boys' school, although two years later on paper, obtained several months' start in bricks and mortar. Thos. Dinwiddy.

BUILDING ON LEASED LAND.

Sir,—It would appear from recent articles and correspondence in your paper that there are quarters in which the system of letting land on building leases is considered a grievance which must and will some day be suppressed, either by fair means or by foul. Is it not rather a question of demand and supply, which should be allowed to adjust itself?

I will not say that a landowner is entitled to dispose of his land to the best advantage, but that, if a person chooses to take land on an expiring lease, whether it be for 80, 99, or 200 years, or as the case may be, who has a right to prevent him? And if he chooses to build a house calculated to last a thousand years on a fifty years' lease, who has the right to prevent him?

There is no compulsion about the matter,—it is all perfectly voluntary on his part,—he can either take the land or let it alone. It is not a question of if you do not accept a lease for so many years at so much rent your head shall be cut off, but the probability is that if he do not take the land somebody else will.

Instead of the system of leasing being a thing to be deprecated, it is surely a great advantage, as it enables a man to build his house for half, and, in some instances, a quarter, of what it would otherwise cost, as the land is often the most expensive part of the undertaking.

The high price of land, too, seems to be a grievance: that, however, is not the fault of the landowners, but the result of competition; and if a man chooses to give 1,000*l.* an acre, or 100*l.* a foot, for his land,—again, I say, who has the right to prevent him? C. K.

CHURCH-BUILDING NEWS.

Esclusham (near Wrexham).—The church of the Holy Trinity, Esclusham, situate about a mile and a half from Wrexham, was opened for service on the 12th ult. The building consists of nave, chancel, north and south transepts, organ-chamber and vestry, with heating apparatus under the latter. Accommodation is provided for 350 worshippers. The walls and masonry generally are of local stone, the interior face being rough stuccoed. The paved floors in the nave, transepts, vestry, and organ-chambers are of blue and red Staffordshire tiles. The chancel is laid with Messrs. Maw & Co.'s encaustic tiles. The roof is open, of Baltic fir, stained, and covered with red and green slates. The style of the building is Early Geometrical. The future extension of the church will be effected by adding large north and south aisles, for which special provision has been made. The building is heated with hot water by Messrs. Jones & Sons, of London, and the reading-desk, lectern, and other articles of furniture were supplied by Messrs. Jones & Willis, of Birmingham. The general contractors were Messrs. Phennah & Davies, of Rhostyllen, whose contract was 2,541*l.* Mr. J. E. Lash, of Wrexham, was the architect.

Ponder's-end.—The memorial stone of the new district church of St. Matthew, Ponder's-end, was laid on the 17th ult. by Mr. James Meyer. The present contract comprises the nave and north aisle only, with accommodation for 304 adults and 38 children; a portion of the east end of the nave being appropriated as a temporary chancel. The complete design includes a nave of five bays, with clearstory and north and south aisles, a north porch, a tower 20 ft. square and spire 140 ft. high, a south transept, apsidal chancel, and two vestries; the total ultimate accommodation being for 530 adults and 60 children. The amount of the present contract is under 4,000*l.*, inclusive of all expenses except the site, which is a free gift. The walls are of rubble stone, faced externally with Kentish rag in random work; the dressings are of Bath stone; and the roof will be slated. The style adopted is thirteenth-century English Gothic. The architect is Mr. H. J. Paull. The contractors are Messrs. Higgs & Hill, of Lambeth, and the clerk of works is Mr. H. Crocker.

Nolton.—Nolton Church, Pembrokeshire, dedicated to St. Medog, and situated in a romantic glen on the shore of St. Bride's Bay, was re-opened by the Bishop of St. David's on the 13th ult., after restoration. With the exception of some small portions of the east wall of the chancel, and the south wall of the porch, which it was found absolutely necessary to remove and rebuild, the old walls have been left standing. The interesting double-bell turret at the west end unfortunately leaned outwards very considerably, but, notwithstanding this, it was hoped it might have been preserved; but the works incidental to putting the new roof over the nave rendered its reconstruction unavoidable. It was accordingly rebuilt upon the former lines, and the old bell rehung. A new vestry has been built on the north side of the nave, the old north door being utilised as an entrance to it. New slated roofs, of increased pitch and of open timber work, plastered between the rafters, have been provided over the chancel and nave, the ridge cresting being of white ornamental Staffordshire tile, with corresponding terra-cotta crosses from Messrs. Johnson's works, near Burgess-hill, Sussex. The outside of the walls generally have been pointed and the inside plastered. A new encaustic floor has been laid in the chancel. The tiles, which are partly glazed in the Sacrarium, came from Messrs. Webb's works at Worcester, and the remainder from Mr. T. Peake, of Tunstall, in Staffordshire. Substantial open seats have taken the place of the old pews, while the rickety western gallery, too dangerous to use, has been removed. A new pulpit and reading-desk are placed against the north wall. The present accommodation is for 111 persons, eighty-five of whom are seated in the nave. Originally the number was for only seventy-four irrespective of the gallery. The works have been carried out from the plans and under the direction of the architect, Mr. E. H. Lingen Barker, by Messrs. Jones & Jenkins, of Haverfordwest.

Sandhutton.—A new church is at present in course of construction at the village of Sandhutton, near Thirsk, on the site of the old one. The old church of St. Peter had got into such a dilapidated condition, and the walls in winter,

being of sandstone, became so saturated with the wet, that it had become totally unfit for worship, and it was deemed advisable, rather than restore the old building, to build a new church. The architect is Mr. J. P. Pritchett, of Darlington, and the total cost of the rebuilding is about 800*l*. The old east window and one of the windows on the southern side of the chancel will be retained in the new edifice, which is expected to be completed in November.

Miscellanea.

Art on Sundays.—On the question, "How can Art be best introduced into the houses of persons of limited means?" discussed at Aberdeen, a paper was read by Mr. Mark H. Judge, of the Sunday Society, London. In this he said,—Is the best possible use made of the institutions we now possess? Or, again, are they open, available for those of the community who are not their own masters, at the most advantageous times and seasons? From experience both these questions must be replied to negatively, for experience has long ago convinced keen observers on the subject that a few hours each evening is not the most convenient time for thousands to avail themselves of the treat of visiting these collections; neither is the Saturday afternoon, though that period is admittedly more favourable than the evenings preceding it. What then is the most attractive time to offer these seekers after knowledge, beauty, refinement, and recreation? The answer is,—Sunday! Though many may question this fact, fact it still remains, that on Sunday thousands would thankfully enter the dominions of pure recreation and instruction; yet these thousands, hungering for a higher life, are denied the privilege of entering the beautiful, artistic drawing-rooms, which art-galleries are, at the only time when they are free to leave their dark, dirty, wretched sitting-rooms, or may be bedrooms,—at the only time when the mind can escape from the chain of sordidness with which it has been securely bound during the week,—and attempt to entertain a thought of anything approaching to art. The time when people, with few exceptions, are free from the engrossing cares of business, when their minds are open to receive impressions that might brighten future days, and ease the burden which so many have to carry through life, is the time of all others when museums should be opened; and until such and similar places of a refining and elevating character are available during a portion of that most valuable time, the weekly day of rest, a heavy brake will remain upon the van of art-progress; the demand for art-work will not increase, and, as a consequence, art will be too costly to be "introduced into the houses of persons of limited income."

The Church Congress Hall, Croydon.—The temporary hall which has been constructed for the Church Congress at Croydon, in the Fair Field, is 160 ft. in length, 90 ft. in width, and 60 ft. high in the centre, its form being an oblong hexagon. It has a gallery running round three sides, the fourth side being occupied by the platform. It is calculated to seat 3,500 persons, but it is said that if closely packed an audience of 4,000 can assemble in it. There are seven entrances to the hall, four to the galleries, and two to the platform. The sides and roof are match-boarded, and covered with felt outside, the inside being hung with canvas. The platform represents a semicircle, and is raised about 4 ft. at its base. The structure has not been erected by an ordinary builder, but by the well-known drapery firm of Messrs. Whiteley & Co., of Westbourne-grove, Bayswater, who entered into the contract, as we are informed, under somewhat peculiar circumstances. It appears that several builders, who were desirous of sending in tenders, stipulated for the insertion of a clause in the contract, under which they would not have been held responsible for the completion of the building within a given time, in the event of a strike taking place. The introduction of this clause is said to have been objected to by the committee, the consequence being that the several builders declined to tender. Subsequently it appears that Messrs. Whiteley undertook the contract without the clause in question, and during the period of the erection of the several buildings, between 250 and 300 workmen have been engaged, under the personal superintendence of a practical builder, representing Messrs. Whiteley.

Crown Lands.—The annual report of the Commissioners of her Majesty's Woods, Forests, and Land Revenues shows a still increasing product paid into the exchequer from the excess of receipts over expenditure. The amount was 375,000*l*. in the year ending with March, 1874; 385,000*l*., in the year, 1874–5; 395,000*l*., in 1875–6; and now, 410,000*l*. in the year ending last March. From these sums must be deducted the cost of the official establishment, voted annually by Parliament, and that deduction leaves the net income for the year 1876–77 almost exactly equal to the 385,000*l*. which was granted on her Majesty's accession as the civil list proper, that is to say, without including the life pensions for merit granted annually to the extent of 1,200*l*. a year, and of course, without including annuities which have been granted by Parliament from time to time to members of the Royal Family other than her Majesty. The Commissioners report that in the past year they have made purchases to the amount of nearly 50,000*l*. for the investment of moneys derived from sales of estates which it was not desirable to retain. The largest purchase was that of a freehold ground-rent of 1,105*l*. a year, charged upon the building known as 65 and 67, Ludgate-hill, with the reversion to the building at the termination of the subsisting lease in 1955, and for this the price paid (to the City Commissioners of Sewers) was 28,300*l*.

Business Premises, Worcester.—New premises, for Messrs. Stallard & Sons, wine merchants, High-street, Worcester, have lately been completed. The building is in the Italian style, and is divided into three floors. The material used on the ground-floor is Bath stone, the plinths and bases being of Forest of Dean stone. A central entrance gives access to the various offices of the establishment, while a side entrance forms the approach to the newly-arranged Masonic hall and chambers. The want of such a hall had long been felt in the city, but no suitable place presented itself. Messrs. Stallard have erected a hall, 40 ft. long by 21 ft. wide. Adjoining the hall is a dining-room, admirably fitted up, and attached there are two ante-rooms, with lavatory, &c., while beneath there are kitchens, wine-cellars, &c. The work was executed by Mr. Thomas Collins, builder, of Tewkesbury, the carving being entrusted to Mr. H. Martin (Messrs. Martin & Emms, Cheltenham), formerly of this city; the whole being carried out according to designs furnished by Mr. Henry Rowe, architect.

A Mayor of Oxford.—We record with unfeigned sorrow the death of Mr. R. J. Spiers, F.S.A., which took place on the 28th inst., at Huntercombe, in his seventy-second year. To many connected with Freemasonry, whether in London or the Provinces, Mr. Spiers was well known, and he has been associated all his life, more or less, with artists and literary men. As mayor of Oxford, some years ago, his long term of office was a remarkable one. It has been stated that he entertained, during that period, 30,000 persons, including all grades of his townsmen, and did much to bring together "town and gown." With reference to this latter point, we remember hearing H.R.H. the late Prince Consort, at one of the entertainments in Oxford during that time, say, "We want just such a mayor as Mr. Spiers in Cambridge." Several of Mr. Spiers's family, both sons and daughters, have commenced what promises to be an honourable career in the field of art.

Testimonial to a Borough Engineer.—On the 29th ult. the leading officials of the corporation of Salford, the engineering staff, and several others, met in the Council Chamber, at the Town-hall of that borough, and presented Mr. A. M. Fowler, who has succeeded to the post of borough engineer and town surveyor of Newcastle-upon-Tyne, with a tea service, consisting of six pieces of silver plate, value 107*l*. The Town Clerk, in presenting the service, expressed his regret, on the part of the corporation, at Mr. Fowler leaving them. The Newcastle corporation were to be congratulated on obtaining his services.

Memorial of George Stephenson.—At Chesterfield, on the 17th inst., the Marquis of Hartington will lay the foundation-stone of a hall to be erected in that town to the memory of George Stephenson. The hall, which is from the designs of Messrs. Smith & Woodhouse, of Manchester, will cost about 12,000*l*. It will be used for purposes of higher education, special arrangements having been made for science and art teaching.

An Overhead Steam Tramway for Liverpool.—At a recent meeting of the Mersey Docks Board, the Works Committee presented a favourable report on a project by Mr. Alfred Holt to construct a high-level railway along the line of docks, the road to be three miles 1,150 yards in length, and supported on iron columns, and supplied with nine stations. At present the traffic along the line of docks is very great, and it is anticipated that the overhead steam tramway will not only relieve the street below, but will greatly facilitate business people in moving from point to point. The estimated expense of the scheme, including rolling-stock, is 146,000*l*. Plans were submitted to the Board, and Mr. Holt gave notice of his intention to move a formal resolution authorising the Parliamentary Committee to seek legislative sanction for the scheme.

The Nottingham University Buildings. The ceremony of laying the foundation-stone of the University buildings at Nottingham took place on Thursday, the 27th ult. The cost of the buildings, including the land, will be 60,000*l*. Of this sum an anonymous donor has contributed 10,000*l*., and the remainder will be found by the corporation, who have given the site. There will be lecture and class rooms for the promotion of the Cambridge University Extension Scheme, which, it will be remembered, was first incorporated at Nottingham, which has since been carried out successfully in several centres of industry. There will also be class-rooms, laboratory, &c., for the use of the students in the science classes in connexion with the local Mechanics' Institution, as well as rooms for the Free Library and the Natural History Museum. The architects are Messrs. Lockwood & Mawson, of London and Bradford.

New Church at Rattoo.—On the 20th ult. the foundation stone of a new church was laid at Rattoo, by Mr. Wilson Gun, D.L., in the presence of many of the parishioners, the Rev. Mr. M'Ewen, vicar of Listowel, officiating. This building, which has been designed by Mr. J. F. Fuller, F.S.A., of Dublin, architect, is Gothic in design, and will be composed of uncoursed rubble masonry, with Portland stone dressings in the buttresses, tracery, mullions, &c., of windows. The amount of the present contract, which does not include the tower or belfry, has been given by Mr. Gun himself, and the site chosen is within the shadow of the ancient round tower, still in a fair state of preservation, which is chiefly due to the watchful care of Mr. and Mrs. Gun, upon whose property this interesting monument stands. The erection of the new church has been confided to Mr. A. Crosbie, of Tralee, Mr. John Dooner being the clerk of works.

The Proposed Town-hall for Southampton.—The proposal of the Public Offices Committee of the Corporation of Southampton to erect a new Town-hall and Public Offices on the Audit House site, at a cost of 15,000*l*., has been rejected. At the last meeting of the Town Council, Mr. Lemon, the surveyor, as instructed, submitted plans and specifications, first for an entirely new building, estimated to cost the above-named sum; and, secondly, an alternative scheme, whereby the present Council-chamber would be retained, the estimate in that case being 14,000*l*. The committee approved of the former plan, and the Council were asked to sanction it. Those in favour of the proposition were, however, few in number, and an amendment was carried to effect alterations in the present offices at a cost of about 3,000*l*., which, it is thought by the majority of the Council, will satisfy all reasonable requirements for the present.

A Large Stick.—There is at present to be seen in the timber-yard of Messrs. M'Kay & Milne, Hutcheon-street West, Aberdeen, one of the largest blocks of mahogany ever imported into this country. It has been imported from Tobasco, and at the one end it measures 7 ft. 10 in. in diameter, while at the other the measurement is 4 ft. 6 in. As usual with mahogany logs brought to this country, it has been squared; but if it had been imported in its original form, it would have presented a far larger bulk.

Property in Brighton.—Mr. Alfred Morris, clerk to the Guardians, states that the total rentals of Brighton for the past half-year to September 29th were of the value of 652,400*l*. 19*s*.; the rateable value, 519,312*l*.; the 1*s*. poor-rate had produced 25,965*l*. 12*s*.; there was due 238*l*. 15*s*. 10*d*.; and the whole collection would amount to 26,204*l*. 7*s*. 10*d*.; the rateable value of the Western district was 302,561*l*. 10*s*.; Eastern, 216,750*l*. 10*s*.

"Deserving Reward."—We have received 2s. 6d. from Mr. C. C. Hoey and 10s. from Mr. Harry Hems, for George Cross, mason, whose brave conduct in saving the life of a fellow-workman we mentioned some time ago. We will send the little total now in our hands to Cross on receiving from his employer (in Exeter, we believe) a correct address.

A Cast-iron Staircase.—Messrs. Newton, Chambers, & Co., Thorncliffe Ironworks, have just completed an order for an ornamental but substantial cast-iron staircase, for the head office of the Liverpool, London, and Globe Insurance Company, Liverpool. The staircase has been erected in one of the large fitting-shops at the works, and stands 15 ft. high, measures 4 ft. wide, and forms three sides of a square. There are three short flights and two landings, which are supported by eight columns. The treads are made of "green heart," sunk into the cast iron, and the underside is finished with panelled work in mahogany. The design is by Mr. William Froggatt, head draughtsman of the company. The ironwork will be painted in gold and colour, and the cost is about 350*l.*

Board School Sites.—In accordance with a resolution adopted by the London School Board in March last, a return has been prepared, and just issued, showing the cost of the sites of schools purchased by the Board up to the 24th of March, 1877. The total amount of accommodation secured by the sites is for 172,914 children; the purchase-money, including land-tax redemption, was 836,769*l.* 3s. 9d.; the surveyors' fees on both sides amounted to 19,252*l.* 6s. 4d.; the vendors' solicitors' costs were 43,301*l.* 4s. 8d.; the Board solicitors' costs, 41,936*l.* 10s. 7d.; the cost of scheduling, 12,692*l.* 4s.; and the total costs of purchases reached 117,183*l.* These totals, however, include schools for which the accounts of the purchase of the site are not yet completed, as well as those for which the accounts are completed.

TENDERS.

For new house, 94, Ockendon-road, Essex-road, Islington, for Mr. J. Joy. Mr. W. J. Worthington, architect. Messrs. Perry & Reed, surveyors:—

Langmead & Way	£1,620 0 0
Allen	1,595 0 0
Williams & Son	1,585 0 0
Lingrel	1,577 0 0
Jay	1,550 0 0
Cowland	1,534 0 0
Channing	1,375 0 0

For Little Highfield, Hendon, for the Misses Metcalfe. Messrs. Joseph & Pearson, architects. Messrs. Rayner & Shum, surveyors:—

Brass	£5,633 0 0
Foster	5,475 0 0
Twelvetrees	5,410 0 0
Langmead & Way	5,370 0 0
Scrivener & White	5,315 0 0
Axford	5,185 0 0
Williams & Son	5,163 0 0
Browne & Robinson	5,140 0 0
Adamson	5,030 0 0

For alterations and additions to Baptist chapel, Bromley, Kent. Mr. James Barnett, architect:—

Staines & Son (accepted)	£540 0 0

For alterations to the Park-road Hotel, North End, Finchley, for Mr. W. Woolley. Mr. H. R. Cotton, architect:—

Judd & Hawkings	£879 0 0
Petley	869 0 0
Toms	864 0 0
Andrews (accepted)	857 0 0

For making various alterations at the Canterbury Arms, Bomore-road, Notting-hill, for Mr. Sage. Mr. J. R. Furniss, architect:—

Durnford	£246 0 0
Parker	203 0 0
Hartwell	180 0 0
Schlater	178 0 0

For alterations at the Bricklayers' Arms, Collingwood-street, Bethnal-green, for Mr. Higgins. Mr. Edward Brown, architect:—

Stamp & Bowtle	£190 0 0
Marr	191 0 0
Salt	181 0 0

For labour only in the erection of six cottages at Hayes Bridge, Southall, Middlesex, for Mr. F. Newell. Mr. Thomas Newell, architect:—

Shields	£450 0 0
J. Edwards	435 0 0
G. Edwards	430 0 0
Perks	395 0 0
Atkinson (accepted)	310 0 0

For additions to St. Mark's College, Chelsea, for the Rev. Canon Cromwell. Mr. E. H. Lingen-Barker, architect:—

Bradley (accepted)	£407 0 0

For the erection of power-loom shed, warehouse, offices, &c., in Denton Holme, Carlisle. Messrs. Hetherington & Oliver, architects. Quantities supplied:—

Armstrong (accepted)	£7,000 0 0

Accepted for alterations to premises and new shops, Corn Market, Penrith. Messrs. Hetherington & Oliver, architects:—

Joiner's Work.

Richardson	£430 1 3

Plumber, Plasterer, and Painter's Work.

Porter & Dixon	119 3 9

For alterations to premises in King-street, Botchergate, Carlisle. Messrs. Hetherington & Oliver, architects. Quantities supplied:—

Batey & Forster	£341 0 0
Hewitt (accepted)	330 0 0
Guiness & Lister	315 0 0
Hill & Beaty	301 0 0

For residence, stores, and stable, for Mr. Tite. Mr. Burgess J. Reeve, architect. Quantities supplied. (Residence to be measured and valued):—

	For Stores only.
Saunders	£985 0 0
Payne	912 0 0
Butler	777 0 0
Holdom	754 10 0
Webster	736 0 0
Baker	700 0 0
Head	698 0 0
Slade (accepted)	642 17 0

For building a workshop and other works at No. 16, Princes-street, Spitalfields, for Mr. J. Davidson. Mr. John Hudson, architect:—

Sparks	£1,310 0 0
Little	1,153 0 0
Read & Son	955 0 0

For the erection of stables at Monkham's Hall, Waltham Abbey, for Mr. R. B. Colvin. Mr. John Hudson, architect:—

Field & Son	£2,316 0 0
Little	2,213 0 0
Patman	2,148 0 0
Gardener	2,061 0 0
Bentley	1,780 0 0

For draining the surface and paving the footways of Guerin-street and Trellis-street with Patent Victoria Stone, for the Poplar Board of Works:—

	Guerin-street.	Trellis-street.
Knight	£173	£163
Rutty	160	147
Turner	164	142
Patent Victoria Stone Co.*	146	113

* Accepted.

For the erection of engine and boiler house, coal-stores and other works at Combe Down, for the Burgess Hill Water Works Company:—

Doowra (accepted).

TO CORRESPONDENTS.

C. G.—E. A.—S.—J. D.—J. A.—H. G.—L. & W.—J. H.—A. H.—S. & Son.—G. A.—J. R. F.—Hygeia.—H. S. P.—A. H.—H.—J. W.—M. & Son.—J. J.—B. J. R.—C. C. N.—J. H.—R. G. D.—Messrs. C.—T. H. R. (next week).

We are compelled to decline printing out books and giving addresses.

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

Note.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

The Publisher cannot be responsible for Testimonials *left at the Office in reply to Advertisements, and strongly recommends that* Copies only *should be sent.*

Advertisements cannot be received for the current week's issue later than THREE *o'clock p.m. on THURSDAY.*

CHARGES FOR "WANTED" ADVERTISEMENTS.

SITUATIONS VACANT.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

SITUATIONS WANTED.

FOUR Lines (about THIRTY words) or under .. 1s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PRE-PAYMENT IS ABSOLUTELY NECESSARY.

*** Postage Stamps cannot not be sent.

TERMS OF SUBSCRIPTION.

THE BUILDER is supplied *direct* from the Office, to residents in any part of the United Kingdom at the rate of 18s. per annum. *Payable in Advance.*

All remittances should be by Money Order, payable at the Post-office, King-street, Covent-garden, W.C. to DOUGLAS FOURDRINIER, No. 46 Catherine-street, W.C.

Bath Stone of best quality.
RANDELL, SAUNDERS, & CO. (Limited),
Quarrymen and Stone Merchants.
List of Prices at the Quarries and Depôts; also cost of transit to any part of the Kingdom, on application to
Bath Stone Office, Corsham, Wilts. [Advt.]

Asphalte.
Seyssel, Patent Metallic Lava and White Asphaltes.
M. STODART & CO.
Office:
No. 90, Cannon-street, E.C. [Advt.]

The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, terraces, and skating-rinks. [Advt.]

Whitland Abbey Green Slates.—These slates are of a grey green tint, are stout, and made in all sizes. A large stock available for immediate delivery.—For further particulars, apply to MANAGER, Clynderwen, R.S.O., Carmarthenshire.—[Advt.]

MICHELMORE & REAP,
Manufacturers of
CHARLES COLLINGE'S PATENT
COLLINGE'S PATENT HINGES,
LEVER, SCREW, & BARREL BOLTS,
and IMPROVED GATE FITTINGS of every Description.
36A, BOROUGH ROAD,
LONDON, S.E.
Discount to Builders.
Illustrated List, two stamps.

CHAPPUIS' PATENTS

FOR

REFLECTING LIGHT.—DAYLIGHT REFLECTORS

OF EVERY DESCRIPTION, ALSO

ARTIFICIAL LIGHT REFLECTORS.

P. E. CHAPPUIS, Patentee. Factory, 69, Fleet-st. London, E.C.

N.B.—DIAGRAMS AND PROSPECTUSES ON APPLICATION.